Gleanings in Bee Culture

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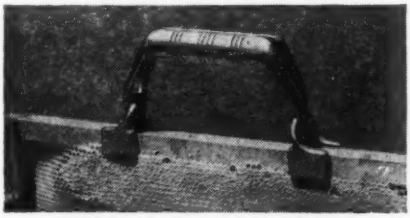

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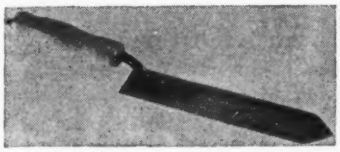

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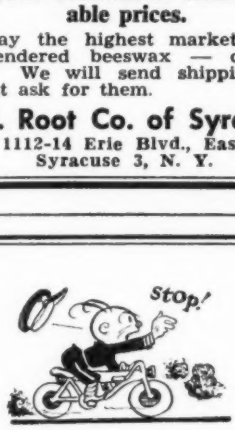

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12/4's 11.99-12.45
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12/4's 9.60- 9.75
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24/16-oz. 6.75- 7.00
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Man., Sask., metal,
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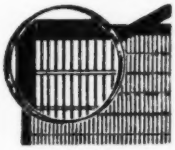

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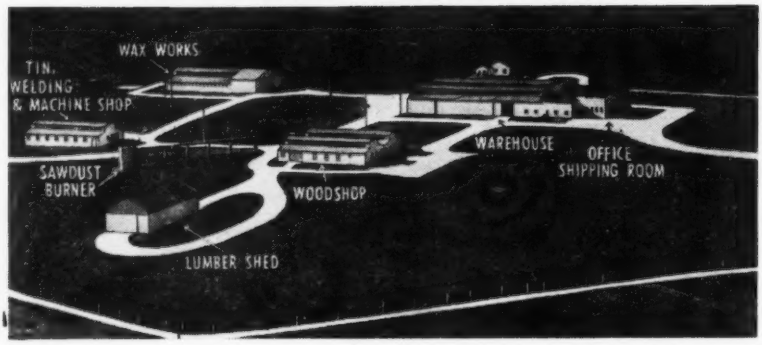

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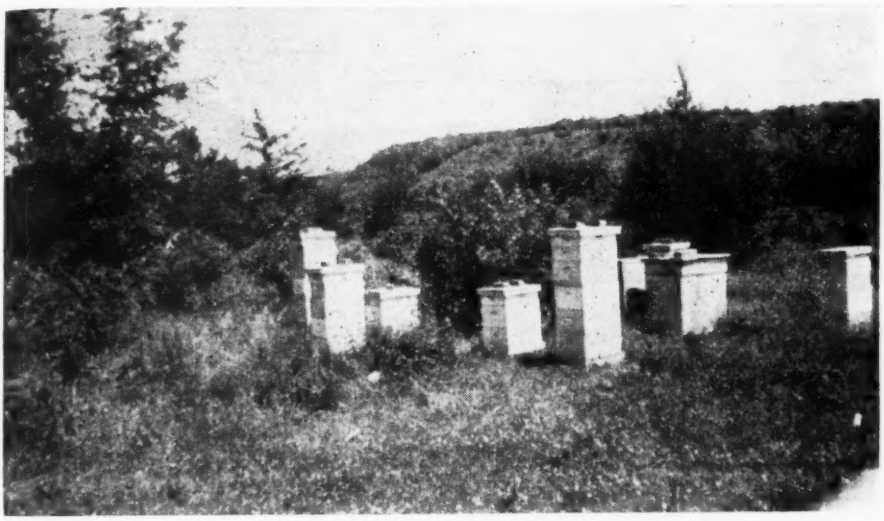
Choosing the apiary site

Some general considerations about the apiary site

ROGER A. MORSE, State Plant Board, Gainesville, Fla.

Part I



The low shrubbery provides a good windbreak for this apiary.
—Photo by E. F. Bea, Welch, Minnesota.

BEES WHICH keep men are located to the best advantage of both the operator and the bees. Too often the beekeeper considers only himself when selecting a location and frequently considers neither himself nor the bees. Honey production is the prime consideration but within every honey-producing area sites both good and bad may be selected.

The importance of a good road to the apiary has been mentioned by many persons and any beekeeper who has had to carry equipment to an apiary on a wheelbarrow because of wet conditions would not question this point. However, if one must choose between a good road for his own convenience and a good location so far as the bees are concerned then the bees must be first and the road secondary.

One beekeeper in Ontario draws gravel in his spare time to fix up his roads through pastures and woods. Probably the increased benefit his bees receive covers the cost of this operation. Four or six wheel drive trucks can be obtained from many manufacturers today at additional cost. Though the original cost is more and also the cost of upkeep, men with these vehicles feel they cannot do without them. Pollination services are likewise speeded up with the use of these trucks.

How the weeds in an apiary should be kept down is a question frequently discussed. A location which is to be used year after year (and in New York State some locations have been permanent for nearly 80 years) deserves some planning and thought. One beekeeper in this area felt it paid him to hire a bulldozer to level a permanent location. This made mowing and walking around the apiary much easier.

Cinders, tarpaper (from the winter packing), and boards have been used in front of hives for a number of years to keep down the weeds. They all require a little attention in the spring but

A windbreak around a typical Georgia apiary. The trap in foreground is for raiding bears.—Photo by C. H. Huey, Fitzgerald, Georgia.

serve the purpose very well. Weed sprayers or other materials to kill the grass in front of the hive have also been used with good results.

Small garden tractors with mowing blades on front can be used successfully in a bee yard. Their greatest disadvantage is that the blade may catch onto a corner of a hive and knock it askew. This frequently means a few stings. Gasoline driven rotary mowing machines also work well in the apiary. They are especially good for cutting down berry bushes and large weeds.

Sheep have been mentioned in the bee journals from time to time as being good "lawn mowers" but they and lawn mowers themselves are scarcely practical for the commercial beekeeper.

Back lotters and persons with only a few colonies could use these last two methods to advantage. One common point of agreement is that some method and preferably the most expedient one should be used to keep the grass away from hive entrances.

Gates and fences are a nuisance and it is not uncommon for a commercial beekeeper to have to open and close two or three gates. A gate and fence around the apiary can serve a useful purpose. Cows and horses when stung will kick the nearest object and if it happens to be a hive this is a serious loss to the beekeeper.

Electric fences have been advised for protection against bears but there are also instances where bears have outwitted the electric fence.

Multifloral roses are now being used as hedgerows and for fences in some areas. They require some fertilizer and cultivation the first year. In three or four years they will serve as a permanent fence and only a gate need be added.

Cedar or pine trees grow quickly and if the tops are trimmed periodically will form heavy hedgerows. Such fences will also force the bees up in the air and above the heads of pasturing animals and people working nearby.

A permanent location deserves these little additions which will pay dividends over the years.

Most of the old established apiaries in this area have small buildings which were used at one time for extracting and storage equipment. One of the greatest advantages of such out-buildings is that they serve for the storage of supers. A fire in a central storage plant would mean the partial loss of crops while foundation was being drawn and combs replaced. Many beekeepers today feel that it is too costly to build out-buildings but the danger of loss of supers through fire alone is sufficient to justify their cost. It would probably be safe not to bother with insurance on combs in such buildings

(Continued on page 187)

The queen and her care

Methods of introduction given

R. L. PARKER, Kansas Agricultural Experiment Station

THE ONLY time commercial beekeepers search for the queen in colonies of bees is when the beekeepers wish to requeen colonies. For indication that the queen is present in the colony, examine the combs in the brood area for eggs or one or two day old larvae.

Marking Queens

To facilitate finding queens, it might be well to mark them with colored rapid-drying enamel or colored fingernail polish as they are received and before introduction to colonies. In marking queens, be sure the coloring material is not smeared on the head, wings, or legs. If these areas are daubed with the coloring material, the worker bees will kill the queen. Practice the technique of bee marking on drones or workers. Use a small brush or toothpick to apply the material to the thorax.

The Confinement of the Queen to One-Hive Body

If the colony is in two or more hive bodies, each hive body should be separated immediately from others before the beginning of the examination to prevent the queen from going from one hive body to another. If the queen cannot be found readily at the time of this examination, a queen excluder can be inserted above and below the particular hive body containing eggs or one to two day old larvae. Such manipulation will confine the queen to that one hive body for later examination.

A queen surrounded by her court. —Photo by A. W. Wittekindt, Bonn, Germany

A Queen Excluder on the Bottom Board

A queen can be found by removing all of the hive bodies from the bottom board and placing thereon a queen excluder upon which is placed an empty hive body. The bees are shaken from the combs to a place in front of the hive. The bees will return to the hive and the replaced combs, and the queen will be trapped on the lower side of the queen excluder. The next morning the hive can be torn down to obtain the queen. The queen excluder is removed after the capture of the queen. The hive is reassembled after the introduction of the new queen. This is a drastic method and should be used only as a last resort.

Detection of a Failing Queen

Brood Indications. One of the first indications of a failing queen in a colony is shrinking of the brood area to half normal size. Another indication is "scattered brood". In other words, the brood is not in a compact mass,

XUM

but in more or less scattered and disconnected areas on the same comb. Sometimes at the end of her usefulness, the queen begins to lay drone eggs. Under such conditions, drone brood in one, three, or four cell groups will be spotted in the brood area.

Age of Queen. A young queen has a sheen on the thorax, whereas an old queen has a darker, dull appearance. The hairs on the thorax and other parts of the body of an old queen have been broken off by the activity of the worker bees, thus giving an old queen a darker and duller appearance. The hind margins and outer tips of the wings become tattered and broken as age progresses. As a queen becomes older, she has a tendency to move more slowly. She also has a tendency to evade the worker.

An expression sometimes used by beekeepers is that the workers follow the queen "begging for eggs."

Declining Honey Production. If a colony were headed by a certain queen, the honey production would be less, due to a reduction in bees after the first two years and, after another year or two, the honey production of this colony would be much less than an average crop, other conditions being favorable.

Swarming Tendency. There is an axiom in beekeeping as follows: "A queen produced in this colony this year will not swarm this year". This is indicative of the fact that as a queen progresses in age, and as colony population each year reaches its peak, new queens are produced and there is a tendency for the colony to swarm.

Requeening Colonies

Why Requeen Colonies? Colonies may need requeening because of queenlessness and replacement of a poor strain or race of bees. Queens sometimes are killed by the beekeeper during the examination of colonies. At other times queens may die of old age or be superseded by young queens.

THE COMMERCIAL honey producer, in order to maintain the queen as an effective egg-laying "machine", usually replaces queens in colonies at least every two years. Queens may live much longer than two years but they decrease their egg laying as they become older.

Requeen During a Declining Nectar Flow. The best time to requeen colonies of honeybees is on a declining nectar flow or during a weak nectar flow any time from July until about the middle of September. In the Arkansas River area of central Kansas, there usually is an alfalfa nectar flow during the early part of September which provides an excellent time to requeen colonies.

Exception. As a general rule, in central Kansas, a good time to requeen colonies is between April 1 and May 1 in the white sweet clover of alfalfa honey-producing areas.

Methods of Queen Introduction

Dequeening a Colony. A colony should be dequeened one to four hours before the introduction of a new queen. The old queen which has been removed from the colony should be saved for a few weeks in a nucleus, or until the new queen is safely introduced to the colony. After the beekeeper is convinced that the queen introduction is satisfactory, the old queen can be destroyed and the brood and bees of the nucleus united with another colony.

Laying Worker Difficulties. If a colony continues queenless for a short time, laying workers may appear. The treatment for such colonies is to disorganize or break up the colonies into several nuclei, or to unite them with strong queen-right colonies.

Use of Queen Mailing Cage and Non-disturbance. In requeening strong colonies, the safest procedure is to introduce a queen to a two or three frame nucleus first. The nucleus later can be united with a colony to be requeened. This uniting should be done by the newspaper method. The queen mailing cage frequently is used by beekeepers as a queen-introduction cage. If such a cage is used for introducing a queen, all of the attendant bees should be removed from the cage. This should be done inside of a building to prevent the escape of the queen.

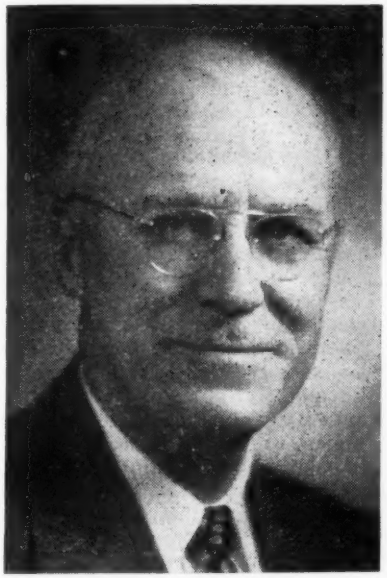
A queen-mailing cage can be used as a queen-introduction cage after the pasteboard covering the candy has been removed. For quick introduction, a match or a 10-penny nail pushed through the candy will provide a partial opening which will be more readily

(Continued on page 189)

Problems arising from changing flora

Buckwheat honey is becoming rare

DR. E. J. DYCE, Cornell University, Ithaca, N. Y.



Dr. E. J. Dyce

OVER THE YEARS commercial beekeepers in Central and some other sections of New York State could usually count on a surplus of from 40 to 60 pounds of clover honey and from 60 to 80 pounds of buckwheat honey per colony. But during recent years surpluses from both these crops have declined to a marked degree. In fact, the last good crop of clover honey in this area was harvested in 1941. On the other hand, the production of goldenrod and aster honey has greatly increased.

Until about the end of the Second World War, Central New York was the hub of the buckwheat honey producing area in the eastern part of this country. This honey was normally in surplus supply and the problem of marketing it was not an easy one. Since buckwheat honey sold at a lower price than the lighter types of honey, many people learned to like it and actually prefer it to all other honeys. To each of us the best honey in the world is the one we ate as a child.

Each year several letters are received from people who were raised in this State and who moved to other parts of the country where no buckwheat honey is produced. They want to know where they can purchase some good old-fashioned dark buckwheat honey. To them no honey is as good and they are willing to pay almost any price to get it.

Over the years considerable buckwheat honey produced in New York State was sold in retail containers. Some was exported to Europe and a good share of it went to bakers in New York City and to other cities along the Atlantic Coast. Most of this honey purchased by bakers was used to make buckwheat honey cakes.

For many years the demand for buckwheat honey in the baking trade gradually increased. This was brought about by supplying them with a constant source of a uniform blend of pasteurized, well-strained buckwheat honey. Bakers were tired of purchasing small lots of honey direct from beekeepers. It often varied in color and flavor and frequently started to ferment before they could use it. The shipping of honey to large packing plants with facilities to properly blend and pack large batches of honey created an ever-increasing demand for this honey.

Second World War Brought Changes

FOLLOWING THE Second World War the picture changed. The production of buckwheat honey gradually declined and now there is not enough to meet the demand. Reduction in the acreage of buckwheat planted for seed is the chief reason for this situation. Less buckwheat flour is used in pancake mixes and in formulas for feeding chickens and other animals, and less seed is exported. Considerable buckwheat seed was exported to Poland and some of the other countries which are now behind the iron curtain. At any rate the demand for buckwheat seed has rapidly declined and most of the farmers have stopped growing it.

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Another angle to the over-all picture is that thousands of acres of marginal land around many villages, towns, and cities now grow little but weeds—chiefly goldenrods and asters. Many people who at one time worked this land now find it more profitable to make a living from jobs in nearby towns or cities. Census figures show that only one in every five persons living in the open country was engaged in farming in 1950. While the total population of New York State rose 10 per cent during the decade ending in 1950 the farm population decreased by one-fifth. This leaves only 580,000 or four per cent of the State's population classified as farmers.

Goldenrods normally start to yield nectar a little ahead of the time buckwheat commences to yield. Where goldenrods thrive, and there are many acres of them, a large percentage of bees start to work them. The bees prefer to remain with these plants and few of them appear to switch over to buckwheat when it starts to yield. This results in a decline in the amount of buckwheat honey produced even in areas where considerable buckwheat is still grown for seed.

In other words, in New York State during the past few years there has been a gradual decrease in the production of clover and buckwheat honeys and a gradual increase in the production of goldenrod and aster honeys.

Since beekeepers in the central part of the state are no longer securing a surplus of clover honey, does it pay to continue to build strong colonies in the spring for this crop? Successful beekeeping consists of having a maximum number of young bees in the colonies at the beginning of a major honey flow.

Most of the beekeepers in this state have been wintering their colonies in double brood chambers provided with about 60 pounds of honey. The bees use up practically all of this honey by the time the clovers commence to yield. The colonies are in prime condition to gather a maximum crop but when there is little or no nectar available they wear themselves out searching for it. Most of the colonies soon decline in populations and few of them are in good condition to gather a fall crop from goldenrod and aster.

If conditions continue as they have during the past 14 years it would be unwise to continue to let the bees use up tons of honey to build colonies for a clover crop which they seldom secure. Beekeepers live in hope of a crop of clover honey next year but when that crop occurs about once in ten years the gamble is too great.

Some beekeepers are giving thought to wintering half the number of their colonies and dividing them in the spring. The divisions headed by young queens from the South along with the small parent colonies could then be stimulated to reach their maximum strength by the beginning of the goldenrod flow. This practice would permit extracting the food chambers of half the number of colonies. Other beekeepers are wondering if it would pay to winter nuclei, or at least considerably smaller colonies, and then build up these colonies for the fall honey flow.

Fortunately, goldenrod and aster honeys are lighter in color and milder in flavor than buckwheat honey. Several bakers who could not use buckwheat honey are able to use a good uniform blend of these honeys. If beekeepers can be encouraged to ship goldenrod and aster honeys to large blending plants where proper packing facilities are available it should not be difficult to establish a sound market for this honey.

Few bakers have the space or wish to go to the expense of warehousing their annual supply of honey. The packers who are willing to provide this service will naturally get the business. The problem of securing a good price for non-table grade honeys appears to boil down to supplying manufacturers throughout the year with a well packed uniform blend of honey.

Over the years many packers have actually encouraged consumers to eat no other than light mild-flavored honeys. In order to increase sales they or their brokers have played up the point that their honey is lighter than their competitors. The buyers accept this argument and if the honey is actually lighter than that offered by other packers they buy the honey. This results in a competitive race between packers to pack the lightest possible honey. Parents and their children who are constantly offered light mild-flavored honeys soon learn to prefer these to all other types of honey.

Fields of buckwheat like this one are becoming rare.—Photo by J. H. Staby, Kenmore, New York.

Growing Demand for Amber Honey

SOME PACKERS put up a good blend of amber honey as well as a light honey for the retail trade. The amber honey is offered at a lower price and it usually enjoys a good demand. This is a step in the right direction and should be followed by more packers. Most people think of honey as golden or amber in color, not water white; yet we constantly teach the public to buy white or water white honey. We then turn around and complain about our large surpluses of non-table grade honeys. It is unlikely that there will ever be enough light or water white honey produced in this country for table use. As our population increases the honey will likely become darker in color. At least this is what appears to have happened in other heavily populated countries.

Heather honey, like buckwheat honey, is dark in color and rather strong in flavor. Most people who taste it for the first time do not like it. On the other hand, in countries where it is produced in quantity, it is in great demand. In the British Isles, for example, it sells for the highest price. In fact, in this State during recent years buckwheat honey often sells at the same price as clover honey. It is largely a matter of consumer education and we are making a mistake if we do not educate the future generation to enjoy darker blends of honey.

In and around large towns and cities there are numerous beekeepers' associations. In the New York City area, for example, there are four aggressive associations which meet once a month. Few of the members of these associations own more than three or four colonies yet all of them are enthusiastic promoters of honey. They not only pack and sell their own honey locally but some of them buy honey from commercial beekeepers and sell it to their neighbors. The honey which they pack and sell is usually amber in color and their neighbors like it. Since honey is largely an impulse item these organizations doubtless teach thousands of people to enjoy honey who would otherwise not be sufficiently interested to buy it in the stores. These organizations should be encouraged.

In this world we will always encounter changing conditions. Those who make a basic analysis of their problems and give them sufficient thought are usually able to surmount their difficulties and succeed.

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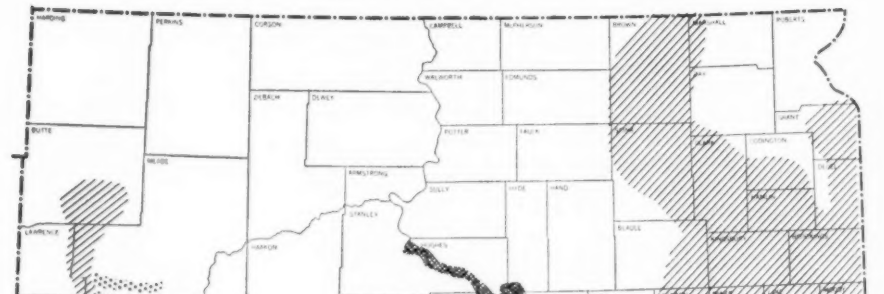
Beekeeping in South Dakota

WARREN MILLER, Director of Plant Industry Bureau
South Dakota Department of Agriculture, Pierre, S. D.



DURING THE PAST few years South Dakota, located in the heart of the upper midwest, has been called the "Beekeepers' Paradise". Average honey yields prove to be one of the highest in the Nation and top quality honey is produced from the vast acreage of sweet clover and alfalfa prevalent throughout the state.

South Dakota agriculture is greatly diversified with the east-central part of the state being our primary bee territory. With completion of the Missouri River basin project and the promise of irrigation in our state, new territory is expected to be opened up for the beekeeper east and west of the Missouri River.

Approximately half of the bees kept in our state are owned by non-resident beekeepers and a further increase is expected for 1955 with numerous requests for yard locations yet to be processed.

Several good honey-producing areas in South Dakota are still available for commercial beekeepers and anyone desiring to move bees into the State of South Dakota are instructed to contact the author, supplying him with the proper health certificate, completed past-history questionnaire and desired yard locations. Following are a breakdown and discussion of the beekeeping regions in South Dakota considering this to be a general classification and that exceptions could be found within almost every area.

Primary Region

This area generally includes the eastern one-third of South Dakota, extending to two or three counties in the south-central part of the state. The primary nectar sources in this area are yellow and white blossom sweet clover, alfalfa, hubam clover, some alsike clover, with many minor sources available. Heartsease is the principal source of honey in the late fall in this region. Some years an abundance of sweet clover is found growing wild in ditches and along roadsides.

This area includes all or part of the following counties: Brown, Spink, Clark, Codington, Hamlin, Deuel, Grant, Kingsbury, Brookings, Beadle, Sanborn, Miner, Lake, Moody, Minne-

haha, McCook, Davison, Aurora, Brule, Charles Mix, Gregory, Tripp, Bon Homme, Turner, Lincoln, Clay, and Union, also Marshall and Hanson.

Secondary Regions

The largest of the Secondary regions is found in the counties of Butte, Lawrence, Meade, and Pennington in west-central South Dakota. Normally fair to good honey yields are obtained with the northern part of this area most promising due to the Belle Fourche Irrigation Project presently in operation. Here again, an abundance of sweet clover and alfalfa are found as the primary nectar sources. Very high yields have been reported from this area the past few years.

Immediately to the south of the above-mentioned secondary region is found the territory within the regions of Custer and Fall River Counties where some of the highest yields reported this year are found. Primary nectar sources are sweet clover, alfalfa, fruit blossoms. Angostura Dam at the southern end of this area provides abundant water for production of legumes making potential honey crops apparent and possible every year. Several commercial beekeepers from outside states adjoining this area have registered yard locations here, and find it a very desirable territory.

A third secondary region prevails in Bennett County, adjoining the County Seat of Martin, South Dakota, and following a large valley east by west in this County. Here primary nectar sources are alfalfa and sweet clover with high yields reported.

A fourth secondary region exists along the Little White River in Mellette County where again alfalfa and sweet clover are the primary nectar sources. Yields reported here are slightly lower than those of the other three secondary regions. It should be mentioned that soil classes in the last of the three secondary regions include the "gumboes" and shales originating from sedimentary rock much of which was deposited by wind and water.

Marginal Regions

With the advent of irrigation in South Dakota, a bright future is in store for beekeepers in that much of the marginal and submarginal land adjoining proposed watersheds would create vast acreages of irrigable land suitable for production primarily of legumes in our state. The Oahe River Project of the Missouri River Basin Development Program is expected to provide an additional 750,000 acres of irrigable land in an area extending about 100 miles from the vicinity of Aberdeen, South Dakota on the north, to near Woonsocket, South Dakota, on the south.

The first marginal area, the larger of the two, includes the counties of Hanson, Douglas, Hutchison, Yankton, and the northeastern half of Bon Homme. Dry land farming predominates in this area, however, fair honey crops have been obtained in the average years. There are but a few commercial producers who regularly keep bees in this area. The second and smallest of the marginal areas follows the Missouri River starting at the northern end of Hughes and Stanley Counties and following to the southeast bordering the counties of Lyman, Buffalo, and Brule. The Missouri River bottom in this area provides reliable nectar supplies and some irrigation is done in this territory.

Submarginal Region

Commercial beekeeping could not be carried out to any great extent in this entire area. Naturally there are some exceptions, however, inadequate rainfall, along with practically much of the area in grassland, only isolated spots could support a few colonies of bees. Some of this area, as previously explained, holds much promise for beekeepers after completion of the proposed irrigation projects now being built.

Morse to Florida

Roger A. Morse, Assistant in Apiculture at Cornell University, has been appointed to the new post of Entomologist for the State Plant Board of Florida. He recently received a Ph.D. degree in Apiculture and Economic Entomology while working under Dr. E. J. Dyce at Cornell University.

Dr. Morse is well known for his research on honey wine and Birdsfoot trefoil which has been reported in Gleanings. He was for a time the official honey grader for the Finger Lakes Honey Co-op in Groton, New York. Gleanings hopes that Florida beekeepers will take advantage of Dr. Morse and have him work on a research problem.

XUM

On handling bees

DAVID BONE, Kent, England

AN OLD gentleman was once relating to me the sad story of his daughter's failure with bees. I gathered from his remarks that the seasons had been lean, and that the bees had been very bad tempered, and had swarmed excessively. But the old man, although no beekeeper, had his own views on the cause of the failure. "The real trouble was," he confided to me, "that she tried to do without a hive-tool. You cannot do any good with bees unless you have a hive-tool."

Droll as this opinion was, there was some truth in it. A hive-tool will not prevent swarming, neither will it bring on a honey flow: but it is undoubtedly the most useful tool that the beekeeper possesses. I have often examined stocks without a smoker, or without a veil, or without either; but I have never been able to get on well without a hive-tool.

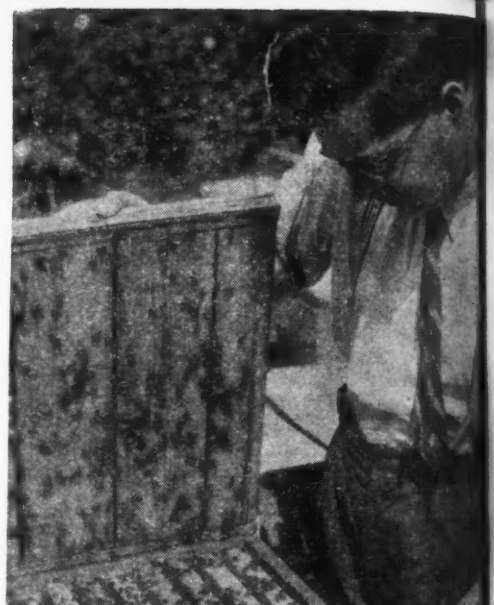


Fig. 1. Removing the inner cover. The super has been staggered to provide a middle entrance and to promote ventilation.

A screw driver is a very poor substitute.

Many different types of hive-tool are available—straight or curved, wide or narrow, with a waist or without a waist, gleaming and stainless or dull and liable to go rusty if you leave them out in the rain. The blades should, however, be wide and thin, but should not be too sharp. An actual knife-edge is not desirable.

Use of the Smoker

Smoke is generally supposed to quiet and subdue the bees: but to my way of thinking, the chief use of it is to move the bees out of your way while you manipulate the various parts of the hive. Thus, also, it is excellent for gently and surely evicting a swarm from an awkward situation, and for shepherding them up into a new hive.

The smoker does not seem to me to have quite such magical effects in pacifying a bad-tempered colony: in fact, really bad-tempered colonies seem, if anything, to resent it all the more. Nevertheless, it does have a calming and quietening effect on bees that are unduly excited; and it enables the beekeeper to move them out of the way of his fingers, and away from any place where they might get crushed during his manipulations.

The best type of smoker to use is the bent-nosed American pattern. In England there is put into the hands of almost every beginner an infernal little contraption called the Bingham smoker, which is apt to make even the most placid operator recall, at frequent intervals, the language he learned in the army. The smoke should not be pungent or acrid. Rotten wood, or punk as it is called, is a very suitable fuel.

A veil should always be at hand, though, after a little experience, it need not always be worn. I prefer a simple veil of fine black net, worn over a white felt hat with a wide brim. The veil should be of silk if possible, and as long as may be obtained, so that it may be well tucked into the collar, and yet stand out from the face.

A beginner should wear a veil at all times. Yet there are occasions when one may put the veil aside without any desire to impress bystanders by one's intrepidity. In hot summer weather one swelters in a veil; and if you belong to the vast bespectacled army of the short-sighted, the sweat soon pours down over your glasses and spoils your view.

IF A BEE gets inside your veil, you may accept it with stoical calm, gently releasing it when a convenient opportunity arrives and you have your hands free. The bee who suddenly finds herself caught in a net, is so anxious to get out again that she forgets any anger she may have had, and hardly ever stings.

I say **hardly ever** rather than **never.** For once, when I had been keeping bees for many years, a novice was helping me among the hives, and got a bee inside his veil. He announced the news rather apprehensively. "It's quite all right," I reassured him. "A bee that gets into your veil **never** stings, so long as you don't crush her." Hardly had I spoken these words, when a bee that happened to have gotten inside my own veil gave me a shrewd jab on the nose, as much as to say: "Don't talk nonsense! Bees do nothing **invariably.**"

Gloves should be worn if you lack confidence, or suspect that the bees are planning to give you a singularly lively reception. Personally, I laid aside my own bee gloves forever a few days after I had got my first colony and have never worn them since, except to keep my hands free from propolis when clipping queens. Even for this delicate work, however, I prefer to cleanse my fingers just beforehand with a little methylated spirit, which I always carry with me in my bee bag.

It is well to protect your ankles, and to adopt some means whereby bees may be prevented from wandering up inside the legs of your trousers. Unless very angry, bees rarely attack the ankles; but they are inveterate wanderers up the trousers. A simple way of keeping them out is to tuck the trouser-legs inside the socks. To protect the ankles, boots may be worn. Gumboots serve both purposes.

Good Weather is Important

The choice of suitable weather for working with bees is important. Wind and cold are to be avoided. Strong winds exasperate bees and beekeeper alike, and make it impossible to handle the frames with precision and steadiness. But an apiary should, in any case, be in a sheltered situation.

Cold is liable to chill the young unsealed brood. If the weather is cool, and I am doubtful if it is wise to open colonies, I go out of doors, take off my jacket, and roll up my shirtsleeves. If then I begin to feel uncomfortably cool, I conclude that so would the bees.

I always like to work among the hives in this very light garb, because then (particularly in the doubtful and fickle spring days) if I begin to feel the cold, I am warned that it is unwise to expose the bees longer.

Now let us approach the hive itself. See that your smoker is well lighted before you start. Stand at one side of the hive, so that the sun is nearly behind you. Then you will have a good light shining right to the bottom of the cells when you hold the frames up for inspection, and you will be able to clearly determine the condition of the brood. You should never stand in front of the hive. If bees encounter a human leg, they will always crawl up

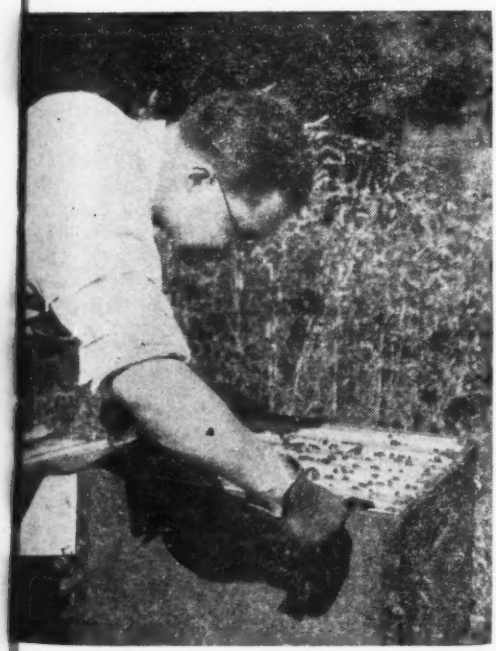


Fig. 2. Using the hive tool to prise the first frame loose.

Fig. 3. Inspecting the second frame, after the first has been removed from the hive to make room.

it. If you stand at the back of the hive it is rather awkward to manipulate the frames properly.

Now remove the outer cover, and with the flat end of your hive-tool prize up the inner cover a little near one or more of its corners, just as much as is necessary to break the seal of propolis with which the bees have stuck it down. When it feels free, raise it a little from the back, gently blowing in a few puffs of smoke as you expose the tops of the frames.

The inner cover, having been slowly lifted, should now finally be detached from the hive body, if it is still stuck along one edge by propolis, and laid aside, with its lower surface, which is covered with bees, uppermost. Personally, I like to shake these bees back into the hive before putting the inner cover down: but this is of no great importance.

All movements should be slow, gentle, and steady. The hands of a clock (that move, as Shakespeare said, with "no pace perceived") are very good to model your style on. Jerky, hurried, or clumsy movements soon anger the bees—with this important exception, that you may dislodge bees from a frame by giving it a good sharp shake or two over the hive. This firm masterly handling they seem to respect, for it seldom ruffles their tempers in the slightest.

Now look to see at which side of the brood chamber the spare space happens to be. This play, generally about a quarter of an inch, facilitates the removal of the first frame from the hive. With the bent end of your hive-tool, and making use of this space, detach the outermost frame, and, taking a firm grip upon the ends of it, draw it carefully from the hive.

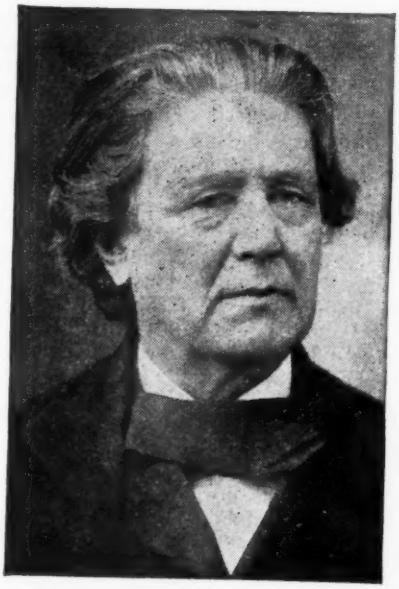
Most people, after inspecting this first frame, lean it up against the outside of the hive. Since the comb is often covered with bees, they tend to wander off the frame on to the sides of the hive and into the grass in a distracted manner. Therefore, I like to place this preliminary frame in a nucleus-box, or light rack specially made for the purpose, which I place upon the top of the neighboring hive. This rack, which should be made so as to hold two brood-frames, is also most useful when you want to pick a queen off a comb, as for clipping.

Now there is plenty of room for levering the next frame free, and for withdrawing it from the hive. The frames are tightly stuck together with propolis, which is soft and sticky in warm weather, but hard and brittle in cold. In summer it may make one's fingers in such a mess as almost to bind them together and I always carry with me a bottle of methylated spirit and a rag to clean my hands when they get gummed up.

How many can you identify?

Front row, left to right: 1, 2, 3, 4, 5, 6, 7.....

Back row, left to right: 8, 9, 10, 11, 12, 13, 14, 15.....



16. .....

17. .....

(See page 152 for the correct answers.)

Spring management in the apiary

E. C. MARTIN, Michigan State College

Mr. and Mrs. Waldron of Malvern, Pennsylvania are thoroughly checking their colonies for stores, condition of the queen, and presence of diseases. This is a part of their regular spring program.—Photo by Paul Hadley, Philadelphia, Pennsylvania.

IN THIS ARTICLE I propose to discuss the various aspects of spring management under several separate headings. This approach should be more useful to the average reader although the beginner prefers to have clearcut statements as to what he should do on specific dates.

A beginner looking for more specific advice on spring management is advised to read the sections dealing with management in one or more of the recent bee books. One or two good bee books and a subscription to one or more bee journals is an essential part of the beginner's equipment.

(a) **Main Essentials of Spring Management**

1. To build up peak populations of bees in time for the main nectar flow.
2. To provide conditions so that the bees will reach the main flow with good morale. By good morale is meant that a colony has the maximum number of it's worker population making the maximum number of trips every day during nectar flows. Such things as the absence of swarming desire; fortunate balance of bees of different ages during a flow; and living and ripening space within the hive, affect colony morale.

(b) **The Queen**

A queen with a good capacity to lay eggs is of course fundamental to developing a populous colony in time for the main flow. A failing queen may start laying late in the spring, or lay a small number of eggs per day, or cause the bees to supersede her and as a final blow to the colony. The supersedure cells may be used as swarming cells and she may leave with a swarm. Colonies with failing queens may be partly salvaged by requeening them during the spring but this phase of spring management is best cared for the previous summer.

(c) **Population Build-up.**

The queen bee lays the eggs but she

has no further maternal instincts or capacities. Worker bees feed the brood and keep it incubated to over 90°F. The egg-laying capacity of a queen may be 2000 eggs a day but her egg- laying rate may be restricted to one tenth of that number if there are not enough workers to feed and incubate the brood. This is often the cause of the slow population build-up of weak colonies and the reason for the common saying that weak colonies tend to stay weak.

(d) **Uniting Colonies**

The presence of too few worker bees to keep the brood warm is one limiting factor in rapid build-up of a colony's population.* By placing the weak colony on top of a strong one with a queen excluder between, the weak hive receives warmth and worker bees from the hive below. The colonies may be separated later in the spring.

(e) **Equalizing Colonies**

Moving brood from strong hives to weaker hives is sometimes done to develop uniform and consistently strong colonies in time for the honey flow. This manipulation can have merit but there are two serious pitfalls that must be guarded against.

1. By indescriminate moving of brood combs you can spread American foulbrood through the apiary, if disease is prevalent.
2. Unsealed brood given to a weak hive in the spring is quite likely to become chilled and die if there are not enough worker bees to care for it. Sealed brood has more chance of surviving and rapidly contributing to the population necessary to get brood rearing accelerated. Booster packages of bees will also help to accelerate population build-up in a weak colony, particularly if purchased or shaken from another apiary.

(f) **Feeding Pollen Supplement**

Research has shown that feeding pollen supplement in late winter stimulates brood rearing. Young bees then become available early in the brood-rearing drive and they make it possible for further brood rearing to be accelerated more rapidly, thus increasing the chances of obtaining a high colony population in time for the main honey flow. Formulae for pollen supplement and pollen substitute are available.

Some commercial beekeepers are using pollen supplement early in the spring with satisfactory results. More frequently beekeepers use pollen substitute after early spring flying and gathering of natural pollen has started.

These practices serve two different functions. The feeding of pollen supplement cakes inside the hive can provide a sufficient mass of pollen material to stimulate brood rearing before natural pollen becomes available. Feeding of substitute stretches the available supply of natural pollen and helps to sustain brood rearing in spite of a short supply of natural pollen, due to pollen scarcity or poor flying conditions.

Pollen is used by bees in far larger quantities than is commonly realized and it is a vital and strategic material for spring build-up.

(g) **Honey Stores**

It is known that the egg-laying rate of a queen will drop gradually as the colony food supply becomes exhausted. It is probable that reduced egg laying in the face of an impending shortage of food is caused by the worker bees reducing the amount of royal jelly fed to the queen. When there is practically no food left, egg laying will cease and first drone brood, then worker brood, will be carried out of the hive. Beekeepers who operate on a philosophy of plenty of food for winter and spring avoid the chances of periods of reduced egg laying during the spring.

So-called minor flows of spring and fall are very important to the colony. They are sufficiently important that some good commercial beekeepers will locate bees where they do well on the minor flows even though the main flow conditions may not be as good as elsewhere.

The amount of honey consumed by a colony of bees during the spring build-up is very great. The following estimate will serve to point this out. If a colony of bees reared 80,000 workers during the period preceding the main flow the bees should have used about 80 pounds of honey. Basis for

*[This should be done on a cool day—with as little disturbance as possible. It is an advantage also to place the weak colony on top of an inner cover with center block removed, this inner cover resting on queen excluder or visa versa.]

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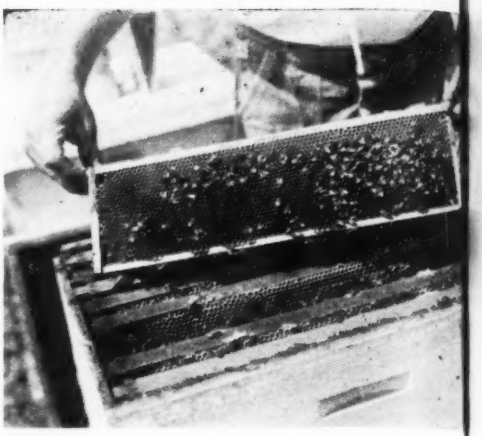
this estimate is that it takes about one cell of honey to rear a bee and there are about 1000 cells in a pound of honey.

It is a matter of opinion whether a surplus of honey should be left for the bees or whether sugar syrup should be fed. The tendency to feed sugar syrup containing drugs for diseases is now influencing the decision of many beekeepers. If this is not a consideration it is economical of time to leave plenty of honey and try to get away from the need for further feeding.



Not much honey left in this food chamber. Feeding may be necessary.—Photo by J. H. Fretz, Bedminster, Pennsylvania.

(h) **Making Increase**

Spring increase without sacrifice of the honey crop can profitably be made in some areas and not in others. In parts of the northern states where build-up noticeably begins in April and the honey flow in June it is possible to divide strong colonies in early May, supply a purchased queen and have both hives build up to good producing colonies that season. This method provides a way to replace winter losses and colonies culled out the previous fall.

(i) **Early Visit to the Apiary**

It is an important disease prevention measure to remove dead colonies from the apiary before flying and robbing can take place. One dead, diseased colony can soon infect the whole apiary. Dead bees may be scraped from the bottom board at this visit. If two people work together, one may tilt the hive on the bottom board and the other scrape out the dead bees with a square end spade.

(j) **Reversing Brood Chambers**

Early swarming desire may be partly checked by reversing double brood chambers once or twice during the spring after warm weather comes. Additional hive bodies should be given well on time as the spring develops. Many beekeepers are very slow to give room in the spring, because they feel that the bees would have too much space to keep warm. This idea can easily be overdone and swarming trouble result.

(k) **Two Queens**

Many attempts have been made in recent years to control swarming and automatically requeen in the same operation by dividing the brood of a colony into two parts by means of a screen or on two bottom boards. The two queens are allowed to lay for a while and then the colony parts are reunited preferably with the young queen remaining. Swarm control and requeening have been two of the bogeys of the business. It will be one of the greatest advances in management in years if methods of accomplishing the above can be perfected and adopted.

Answers to Picture Quiz on page 149

1. **Roland Stone** of the Superior Honey Co. and Bee Industries of California. 2. **R. B. Willson**, noted honey exporter of New York City. 3. **Steve Parks**, Former General Sales Manager of the G. B. Lewis Co. Now deceased. 4. **E. H. Adee**, well known beekeeper and leader of the "500 Club". 5. **T. E. Burlsson**, honey packer and a member of the Board of Directors of the American Honey Institute. 6. **John W. Holzberlein, Jr.**, successful commercial beekeeper. Past President of the American Beekeeping Federation. 7. **Robert H. Dadant**, known as "Bob", of Dadant & Sons, Hamilton, Ill. 8. **Alan Root**, General Manager of the A. I. Root Co., Medina, Ohio. 9. **Roy A. Grout**. Past President of the American Beekeeping Federation and Editor of "The Hive and the Honeybee". 10. **Edward Wolfe**. Former Assistant Secretary of the American Beekeeping Federation. 11. **N. C. Jensen**. Prominent southern queen breeder. 12. **R. F. Remer**. Manager of the Sioux Honey Association. 13. **Glen Gibson**. Past President of the American Beekeeping Federation. 14. **Charles Hanson**. Former member of the Executive Board of the American Beekeeping Federation. 15. **Glen Jones**. Past Secretary of the American Beekeeping Federation.

16. **Lorenzo Lorraine Langstroth**. "The Father of American Beekeeping". Developed a moveable frame hive with an all around bee space. For more details see part three of "The History of Beekeeping" in this issue.

17. **Huber Hall Root**. Associate Editor of Gleanings. Co-editor of "ABC & XYZ of Bee Culture". Author of "Beeswax". President of The A. I. Root Company.

the HISTORY of BEEKEEPING

GEORGE P. GEORGHIOU, Nicosia, Cyprus

Part III

(Continued from February)

1849 A.D.—Hanneman (Germany) observed 20 or 30 drones flying in a wedgelike or funnellike formation in pursuit of a queen at an elevation of about 25 or 30 feet from the ground.

1849 A.D.—Dzierzon published a book "Theorie and Praxis des neuen Bienen-freundes, oder neue art der Bienenzucht" in which he summarizes his theory. (See 1845.)

1851 A.D.—Langstroth (America) devised his epoch-making frame hive, with all-around bee space. This he recorded in his journal on October 31, 1851, with the following remarks: "The use of these frames will, I am persuaded, give a new impetus to the easy and profitable management of bees". Langstroth was the first one to invent an all-around practical hive and frame—a frame that provided a bee space all around it; **but he did not invent the first movable frame.** From his writings it is evident that Langstroth knew nothing about what others had done before him in this line. No one seems to have caught, before him, the idea of a hanging frame, and of the exact bee space.

1852 A.D.—The invention of the loose hanging frame (1851) made possible the beginning of queen rearing. Langstroth, the first one to start a system of queen rearing, used a system of depriving a colony of its queen until it had sealed queen cells. These cells were then removed and a queen given them from another hive. As soon as this second hive had performed in similar manner, the queen was moved into a third one. By moving her back and forth between the three hives, alternately permitting her to lay for about a week at a time in each, he was able to secure a considerable number of queens. Since first one hive and then the other was queenless for a time, there was always a batch of cells coming on in one or the other. Little advance was made from this method for many years. (See 1878).

1852 A.D.—The first importation of honeybees to the west coast of the United States was made by **W. A. Buckley** who reached California with one hive of bees. He had brought the bees from New York by boat to Panama, then overland across the Isthmus, and again by boat to San Francisco.

1853 A.D.—Dzierzon introduced the Italian bee in Silesia, Germany.

1853 A.D.—Publication of the first edition of Langstroth's "The Hive and the Honeybee". (384 pages.)

Publication of the first edition of Quinby's "Mysteries of Bee Keeping Explained". (376 pages.)

1855 A.D.—The first attempt for importing Italian bees into the U.S.A., through Dzierzon, Germany. One nucleus was shipped to Samuel Wagner and Edward Jessup, Pennsylvania, but it arrived dead. It is stated that the nucleus had been robbed of its honey by a ship's officer. (See 1858-1859.)

1855 A.D.—Dzierzon (Germany) switched from bar-hives to movable-frame hives which had just been introduced from America.

1856 A.D.—First issue of the French Bee Magazine "L'Apiculteur".

1856 A.D.—Introduction of the Italian bee into France by Hamet. They did not spread as fast as they did in America.

1857 A.D.—Shrimplin (U.S.A.) reports successful mating of queen and drone by tying them with fine silken threads around the narrow part of the body. This had been tried by Langstroth unsuccessfully.

J. S. Harbison (California, USA) originated the comb honey section which he called "the section honey-

B & Z LIBRARY

Removing honey from old-fashioned skeps in 1517.—Sent by J. K. Vermaas, Netherlands.

comb". This was larger than the section in common use today, and was nailed together at the corners. (See 1879.)

J. Mehring (Germany) invented comb foundation. His product was rather crude, having only the indentations of the bottoms of the cells with no cell walls. The article had been made between engraved flat metal plates.

1858-1859 A.D.—A second attempt by **Samuel Wagner, Langstroth,** and **Richard Colvin** to import the Italian bee into the United States. The attempt was successful.

1859 A.D.—The founding of a National Organization of Beekeepers in American was proposed at a meeting of the Michigan State Beekeepers. (See 1860.)

1860 A.D.—A meeting was held in Cleveland, Ohio, for founding a National beekeepers' organization, but because of the Civil war, the plans were postponed. (See 1870.)

The first direct shipment of Italian bees from Switzerland to the United States. This shipment was made to S. P. Parson, Flushing, New York. Several shipments followed.

1861 A.D.—Founding of the American Bee Journal, by Samuel Wagner in Philadelphia. The American Bee Journal is the first bee magazine to be published in English. The outbreak of the Civil War caused its suspension at the end of the first volume, until 1866 when publication was resumed.

Samuel Wagner (U.S.A.) the founder of the American Bee Journal, improved Mehring's foundation, by adding shallow cell walls. (Later abandoned by Wagner as valueless).

1863 A. D.—The first queens to be sent by mail, were probably the ones sent by a certain C. J. Robinson from Richfield, to Langstroth.

1864 A.D.—First issue of the "Bienen-Wirtschaftliches Zentralblatt" (Germany).

1865 A.D.—Mrs. Ellen Tupper and Mrs. Annie Savery, established a Company by the name of The Italian Bee Company, at Des Moines, Iowa. The object of the Company was "to make the Italian race of bees easily available to the beekeepers of Iowa". No records are available to show the progress of this Company.

Peter Jacob, (Germany) improved Mehring's comb foundation press. Some of his foundation was imported into the U.S.A.

Major D. Hruschka (Austria) discovered the honey extractor. His discovery did not attract much attention in America, until 1867 when Langstroth built the first extractor in this country. He sold a number during

1867. Instead of a metal can, he used a wooden tub to hold the mechanism. Without Langstroth's invention of the movable frame, the discovery of Hruschka would have been of little value.

The Society of Acclimatization, in Berlin, Gemany, imported Egyptian bees into Germany. This was followed by a series of articles in Germany and English bee magazines, which stimulated interest in the new race. (See 1866.)

Abbe Collin (France) first published a "Guide" for the manufacture of perforated metal excluders.

1866 A.D.—The American Bee Journal resumed its publication, that had been discontinued in 1861 because of the Civil War.

1866 A.D.—L. L. Langstroth & Sons, imported the first Egyptian bees in America, through the Society for Acclimatization in Berlin, Germany. Langstroth and Sons advertised the Egyptian bees to the end of 1868, but these bees did not prove satisfactory for American conditions.

The **King Brothers** (N. Y., U. S. A.), made the first foundation rolls.

Moses Quinby advertised to ship queens short distances by mail. Such shipments did not become common, however, since shortly afterwards they were excluded from the mail by postal officials (see 1886).

1868 A.D.—Gallup Kfisha, was the first to report that "the bees that gather the nectar from flowers are not those that store it in the surplus boxes".

A. I. Root, constructed the first all-metal honey extractor in America. (The Novice Extractor.) With this and the previous machines the combs had to be reversed by hand.

1869 A.D.—The H. O. Peabody (U.S.A.) extractor appeared on the market. It differed from others in that the can with contents rotated on a pivot instead of having baskets to revolve inside the can. This machine remained on the market for some years, but never had a large sale.

1869 A.D.—First issue of the "Bienen Vater" (Austria).

1870 A.D.—The North American Bee Association was founded on December 21st, in Indianapolis, Indiana. L. L. Langstroth was elected president. (See 1871).

At a convention called by the Northeastern Beekeepers' Association in Cincinnati, the American Beekeepers' Association was organized. This society also elected L. L. Langstroth as president. (See 1871).

1870 A.D.—Moses Quinby (U.S.A.) discovered the bellows smoker.

1871 A.D.—At a meeting in Cleveland, of the North American Bee Association, and the American Beekeepers' Association, it was voted to dissolve both societies and reorganize under the name of North American Beekeepers' Society. Moses Quinby was appointed as president.

1872 A.D.—First importation of Cyprian Bees into Germany, by Kolowrat and Cori.

1872 A.D.—Charles Nash Abbot (England) in the early '70's offered a wood foundation made of a very thin sheet of wood dipped in melted beeswax. When these sheets were hung in the hive the bees raised cells on the wood base. This invention was soon forgotten. (See 1922).

1873 A.D.—A. I. Root offered to send a piece of comb containing freshly laid eggs from an imported Italian queen. When put to the test, however, it was found that eggs would hatch and produce good queens when sent a short distance, but in no case did they retain any vitality when two or more days were occupied in transit.

First publication of Gleanings in Bee Culture by A. I. Root. It was first called "Novice's Gleanings in Bee Culture", but the "Novice" was dropped with the beginning of the second edition. When, 50 years later A. I. Root reviewed the experiences of the past (Gleanings, Jan. 1923) he stated that at the end of the first year he had 500 subscribers, at the end of the second year 806, which number had increased to more than 1500 at the close of the third year.

1873 A.D.—T. W. Cowan (England) originated the extractor with reversible baskets, which enabled the operator to change sides of the comb to be extracted without lifting them from the machine.

Langstroth was the first to advocate upper entrances. He made and sold hives with such entrances.

1873 A.D.—First issue of the British Bee Journal (England).

(to be continued)

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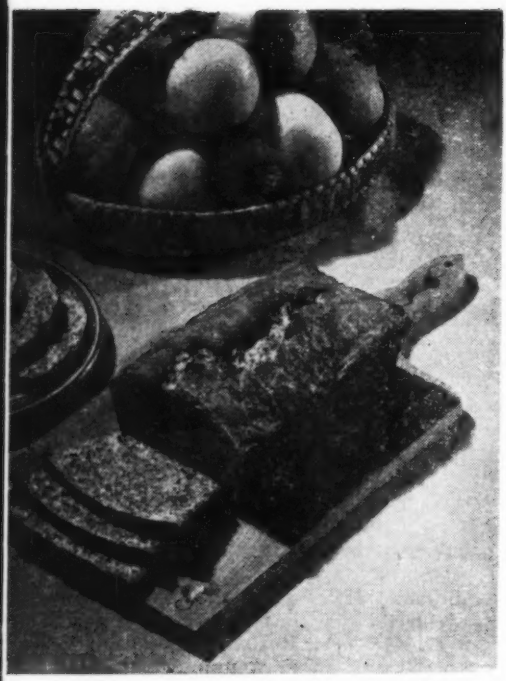

Quick breads the honey way

MRS. BENJ. NIELSEN
Aurora, Nebraska

THERE IS no nicer bit of cookery to have on hand than honey way quick breads. Easy to make and unsurpassed keepers, the flavor continues to improve no matter how long in "keeping" (if you can manage to keep any). This is one type of honey cookery that is practically fool proof too—never a baking failure. Thoroughly cooled, then wrapped in the new transparent material and seconded with gleaming aluminum foil, it is ready for any occasion and will save the day (and the cook's composure!) many a time when unexpected guests drop in. Sliced very thin, with or without butter, or the date variety offered with a variety of mild cheese spreads and accompanied by honey sweetened piping hot coffee, tea, or chocolate! There you are!

The date variety is extra special at the Nielsen house. No Christmas box sent to our New York daughter is quite complete without this date bread. It packs and travels perfectly, and in-between season offerings are accepted most enthusiastically.

Do try one or all!

Honey Orange Bread

Two tablespoons shortening, 1 cup honey, 1 egg, 1½ tablespoons grated orange rind, 2½ cups sifted flour, 2½ teaspoons baking powder, ½ teaspoon soda, ½ teaspoon salt, ¾ cup orange juice, and 1 cup ready-to-eat bran.

Blend shortening and honey; add egg and orange rind and beat well. Sift flour with baking powder, soda, and salt, and add to first mixture alternately with orange juice. Add bran. Pour into greased loaf pan and bake in slow oven, 325 degrees F., for one hour and 10 minutes. Yield: 1 loaf (5¼ x 9⅓-inch pan).

Honey orange bread.—Photo courtesy of Kellogg Co.

Honey Pineapple Bread

Two tablespoons butter, 1 cup honey, 1 egg, 2¼ cups sifted flour, 3 teaspoons baking powder, ½ teaspoon salt, ¾ cup nut meats, 1 cup bran, and 1 cup pineapple juice.

Blend butter and honey. Add egg and beat well. Sift flour, baking powder, and salt together and mix ½ cup with nutmeats. Add half the remaining sifted dry ingredients to the egg mixture and mix well. Add bran and juice and mix, then add remaining flour and nuts. Pour into greased loaf pan and bake in moderate oven, 325 degrees F., 1¼ hours. Yield 1 loaf.

Date Nut Bread

One cup dates, cut fine, 1 cup boiling water, 1 tablespoon butter, ¾ cup honey, 1 egg, 2 cups sifted flour, 1½ teaspoons soda, ½ teaspoon salt, 1 teaspoon vanilla and 1 cup nut meats (optional).

Pour boiling water over dates, add butter and let stand while measuring remaining ingredients. Stir in honey and beaten egg. Mix well. Add flour sifted with soda, salt. Then stir in vanilla and nut meats. Pour into greased loaf pan. Bake in slow oven, 325 degrees F., 1 hour and 20 minutes.

Live and Learn

by Propolis Pete

IT'S FUNNY how easy it is to do things when you have the knowledge and right tools. That is just another way of saying that when we do something without knowing how to go about it, and without the proper tools, we generally make either a lot of work out of it, a mess, or both.

The inspiration for the above is that I have just got through trying out the wax in about 40 old combs that I culled out because they were too dark and had too many drone cells in them. Yes, I weed out the old dark combs with drone cells, instead of keeping them for honey supers. Don't let anybody tell you that those dark combs are all right for storing honey. If you want to see what I mean, just take a look at, and a taste of, the water you boil them in—if you have a strong stomach.

Another reason for making those remarks is because even though I have been doing this for a lot of years, I still think that somebody should invent a better way of doing it. About the best way that I know of is that which has been described in bee literature, that is, to put the old combs in a burlap bag, weight it down under water, and then boil it out. But just the same, every time I do it I wonder if it is worth while, with my facilities.

If you have a lot of stuff to work over, the best thing to do is to put it in bags and ship it to the mill. Then you can dust off your hands and take the check as so much gravy. The trouble is that us little fellers would take a year of Sundays to get together enough to make such a shipment worth while. The value of the wax in a small shipment would be good only for the express or freight company.

Rendering cappings is an entirely different story. Just dump them into a solar wax extractor and pick out the cakes in the morning before the sun gets hot. Old combs and slumgum are what I am talking about, and I am not too sure but what next year I'll just burn them. It's an all-day job to get half a pound of wax the way I have to do it, and even at 50c a pound that isn't very good pay. It hardly pays for the kerosene needed to boil them.

My old two-burner oil stove takes a good two hours to bring an old-fashioned wash boiler to a rolling boil. You can't leave the darned thing, because the minute you do, it will boil over, and then you have to build a new workshop. After it finally has come to a boil and you have poked it with a stick to get the wax through the burlap bag, you either have to skim off the melted wax, or let it cool and pick it off the top. When you try to skim it, you can't get it all, and when you let it cool, it takes as long to cool off as it did to boil, or even longer. With one thing or another, it is an endless job.

So I wish someone would invent a better way of doing it for us little guys. I have thought of a dozen different ways, but every one of them would require an investment for equipment that would take a hundred years to pay off with the wax secured.

Speaking of inventions, some of the old timers had a lot of good ideas. We laugh at some of the things that they did in their ignorance, but don't let anybody kid you. Those old boys very definitely were not dumb. Sometimes I think that they were smarter than we are; it's just that they didn't have the advantages that we have. They had to make the mistakes that we profit by.

Every winter I try to spend some of my surplus time reading the old books on beekeeping that I have acquired over the years. One of my favorites is Dr. Miller's "Fifty Years Among the Bees". I seem to learn something new every time I read it. This year, I was scraping my supers and frames, while culling out the bad combs, and happened across the part where Dr. Miller says that a hatchet is the best tool for scraping propolis and burr combs from surplus equipment. By golly, he was right. I was wearing out my thumb and palm with a regular hive tool, when I read about the hatchet one night. I tried it the next day, and it sure does the work on the supers. The hive tool is still the best for scraping frames, but for the supers (and the tops of the frames while they are in the supers) there is nothing like a good straight edge kindling hatchet. It works best when the edge is ground square instead of sharp like a knife, but the "square" edge should be sharp in the same way that ice skates are sharp. That's a clumsy way of saying what I mean, but I think that you will get the point.

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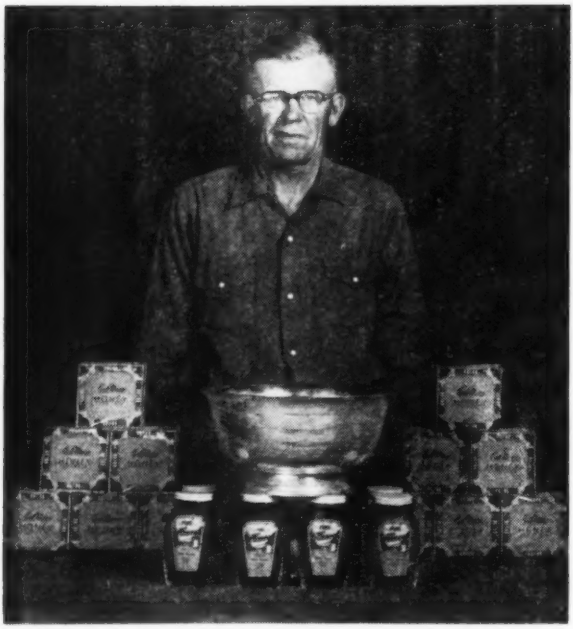
Newsreel



Ephraim Magnuson, of Austin, Minnesota, winner of the R. B. Willson trophy at the 1954 National Honey Show.
—Photo by Herbert Studier, Shell Rock Honey Farms, Glenville, Minn.

Below: An English beekeeper is here seen loading hives onto a small trailer and light tractor for moving short distances into orchards for fruit pollination.—Photo by Frank Buckley, Bristol, England.

Martha and Philip Rogers of Greene, N. Y., use this old-fashioned newspaper layout to sell much of their honey crop. This advertisement sent to us by W. L. Coggshall of Ithaca, N. Y., never fails to draw a lot of attention.

Rogers' Honey Wagon

(SELF SERVICE)

FINEST GRADE
N. Y. State HONEY

Pound 45c
2 pounds 80c
5 pounds $1.45
Comb Honey 55c

HONEY BUTTER

FLOWER FRESH

A Blend of
Country Pure Honey
and
Fresh Butter

HONEY SPREAD

Smooth Pure Honey
Use any time
in place of Strained Honey

Gifts

Spice Jelly Pak $1.00
Three 2¼-oz. jars assorted cinnamon, ginger and mint

Herb Jelly Pak $1.00
Six 1-oz. jars assorted sage, thyme, savory, basil, marjoram and dill

Honey in server 50c
server can be refilled

I'M IN A HURRY
FOR MORE
Home Made BREAD 30c
Made with Honey!

THIS Old Grocery Wagon once traveled from Genegantslet, N. Y., to the little hamlets dotted among the hills of Chenango and northern Broome Counties. It was in use up until forty years ago. Now after years of disuse it has once again trundled down to the main road (Route 12) bringing a load of honey, home made bread, jam, jellies and candies. All of these delicious foods are made in our own kitchen with great care, so you can have real fresh home made treats. Open from May to October.

Stop and visit the original Rogers' Honey House (open all year) 6 - 7/10 miles up the Genenantslet Creek road (the next right turn, going south). We would be pleased to meet you.

Thank you for serving yourself and for your honesty when doing so!

Martha and Philip Rogers

Jams & Jellies
Old Favorites
and
New, Exciting
Flavors

Made in Our Own Kitchen
35c - 3 for $1.00

Old Fashioned

1¢

CANDY

Honey Candy
(No Gelatine)
35c in quart miniture fry pans that can be used later for spoon drip pan.

Here is a sample of the way honey is packed in Holland. It comes under the supervision of the Dutch National Beekeepers' Association which maintains rigorous standards of cleanliness and quality. The photo was sent to us by Harry Vandenberg, La Grange, Ohio, who recently visited many beekeepers throughout Western Europe.

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Editorials

Cook-DuPage Members are Excellent Hosts

JOHN LIS, A. J. Smith, and the other members of the Cook-DuPage Beekeepers' Association who served as hosts to the 12th meeting of the American Beekeeping Federation in Chicago, are to be commended for the fine job that was done. David Meineke handled the public relations exceptionally well and certainly made the most of the famous names in beekeeping by getting these authorities to appear on local radio and television shows. Besides, Dave's choice of a National Honey Queen is without peer.

Mr. L. P. Baker of the Cook-DuPage Association reported an amusing experience that points out the good character of beekeepers. When the facilities of the Sherman Hotel in Chicago were booked for the convention, the manager asked for an approximate number of drunks that could be expected. When the program committee said there would be no drunks the manager laughed and diplomatically dropped the matter. After the convention when the same committee paid for the expenses, the hotel manager stated that this was the first convention in the history of the Sherman Hotel that didn't produce a single drunk.

Here is one record that will be established wherever beekeepers meet. It is a credit to the beekeeping industry and to the Cook-DuPage Beekeepers' Association who served as hosts in Chicago.

Echoes of the Chicago Meeting

THERE APPEAR to be differences of opinions as to what actually constitutes an editorial. Webster says, "An editorial is an article published as an expression of the views of the editor".

Strickly speaking, what follows may not be editorial matter but it is an expression of the views of some of the outstanding leaders in our industry who appeared on the program of the National Beekeepers' Federation meeting held recently in Chicago. Our readers will want to know more about what came out of the meeting, so we shall try to present some of the highlights, other than what appear in the report of the meeting, page 172.

Some Southern Bee Shippers Turn to Honey Production. Some years ago when package bee and queen shipping was at its height, approximately one million pounds of bees and one million queens were shipped from south to north each season. During recent years, the bee and queen business has fallen off to such an extent that it has been necessary for some shippers to devote their bees to honey production.

Most of these shippers are producing chunk comb honey. Since some of the producers and packers of chunk honey have experienced difficulty in moving their product onto the market before it starts to granulate, the following resolution was passed:

"Whereas the present existing regulations of the Price Support Program lacks provisions for loans to producers of chunk honey, be it resolved: that the U.S.D.A. be requested to extend loans to producers of chunk comb honey, so packed and that the resolution be spread upon the minutes of this convention

and a copy sent to the Hon. Ezra T. Benson, Secretary of Agriculture, for his consideration."

Short Honey Crop in 1954. Harold Clay of Washington, D. C., mentioned the 1954 crop as being seven million pounds less than 1953 and the smallest crop since 1947. Only 75 beekeepers had honey on loan. Honey prices are on an upward trend and there is very little left in the hands of producers. Honey is likely to be cleaned up before the 1955 crop comes.

The More Honeybees the More Clover Seed. This was brought out by a number of speakers and is especially true in areas where wild bees are s c a r c e. From two to three colonies are necessary for the pollination of alsike clover. For red clover and alfalfa pollination, hives of bees should be from 400 to 600 feet from the fields of clover and there should be at least two colonies per acre.

Bee Breeding. Dr. C. L. Farrar, Bee Culture Laboratory, Madison, Wisconsin, mentioned that there are only about a half dozen geneticists at work on bee breeding at the present time. Some headway is being made in producing strains of bees that are desirable. Some strains are difficult to handle. Temper in bees can be reduced by proper breeding.

It used to be thought by some that queen bees mate only once but it has been found recently that some queens have mated six or seven times. Drones will sometimes fly five or six miles to mate with virgin queens. This emphasizes the importance of keeping races of bees a reasonable distance apart, especially where bee breeding is being carried on.

Per Capita Consumption of Honey Should be Increased. Dr. J. W. White, Jr., Eastern Regional Research Laboratory, Philadelphia, mentioned a slight increase of .08 of a pound of honey in ten years, while the gain in corn sugar consumption has been three times that of honey.

The Canadian consumption of honey in 1930 was one and one-half pounds per capita. At present it is almost three pounds per capita. In the United States it is a little over one and one-half pounds per capita.

Comic Strip H o n e y Advertising. Tom Shields, manager of the Ontario Honey Co-op., mentioned various methods of advertising honey being used in Canada. The comic strip appeared to pull best, presumably because it appeals to young people as well as adults. Youngsters get down on their hands and knees on the floor to read the comics.

It would appear that more honey advertising s h o u l d be leveled at the younger generation who are our future citizens. It is not easy to change the eating habits of adults. It has been said that, "you cannot teach an old dog new tricks". On the other hand, the younger generation is more susceptible to suggestions regarding the use of honey.

In our opinion, the per capita consumption in the U. S. could be increased measurably if producers of honey would actually become more interested in their product and publicize its virtues from the housetops, if necessary.

A Session for Hobbyist Beekeepers. It was noted that the program did not have anything of special interest to beginners, and quite a number of beginners were present. On the first evening a panel discussion on problems of hobbyists was conducted by Newman Lyle, Program Chairman. An interesting talk was given by James I. Hambleton, Beltsville, Maryland, in which he emphasized the importance of paying more attention to beginner and backlot beekeepers in metropolitan areas. A large percentage of our beekeepers are found in these areas where they derive a great deal of pleasure and some profit from their bees.

Our industry needs more beginner and hobbyist beekeepers. Honeybees are needed in towns and cities to pollinate fruits and vegetables. Some of the hobbyist beekeepers become good commercial beekeepers needed by our industry. Enthusiastic hobbyist beekeepers talk bees and h o n e y among neighbors and help create consumer interest in our product. Some city beekeepers are experiencing difficulties with a few people who wish to have bees removed from within the city limits. The following resolution was drafted:

BE IT RESOLVED, that the American Beekeeping Federation assembled in Chicago the 28th day of January, 1955, establish a committee to assist the city hobbyist to establish and develop an educational program designed to promote better public relations relative to the tolerance of bees in Metropolitan Areas.

XUM

A Talk to Beekeepers

Spring Bee Fever — What to Do for It

M. J. Deyell

ABOUT THE middle of March, in the North, along comes one of those delightful, sunshiny, lamb-like days—a sort of forerunner of spring. Old Sol has warmed the heart of the brook that babbles merrily along through the meadows, the caw of the crow breaks forth from the distant tree tops, and the hens cackle around the old barn.

Back in the orchard is heard the hum of the bees as they glory in the sunshine and begin spring house cleaning after being confined to their hives during the long dreary winter.

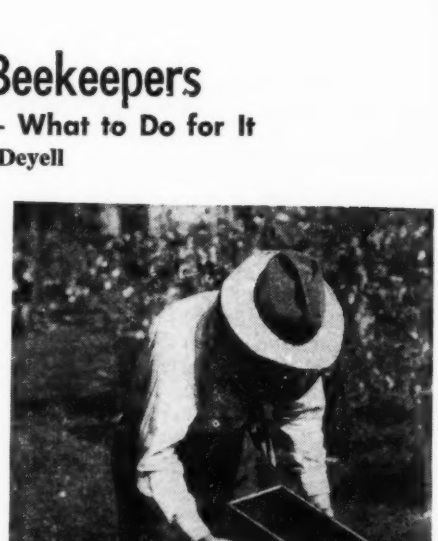
As the owner of the bees walks to the barn to feed his stock at high noon, he feels a touch of spring fever. When his ears catch the hum of the bees in the orchard, complications set in and he is seized suddenly with a violent case of spring bee fever (**Apis sebris**), a disease common to beekeepers. He forgets all about his hungry horses and cows and makes a beeline for his apiary, never stopping to close the garden gate.

Bee Fever's Most Serious Symptom

The most serious symptom of bee fever in early spring is anxiety regarding the condition of the bees. The symptom manifests itself in an intense desire to open the hives to learn the exact condition within and this regardless of weather conditions.

Bee fever has two minor symptoms: A desire to be working with bees and the desire to talk about bees. All beekeepers have experienced these symptoms in varying degrees. In fact, they are more or less chronic with beekeepers and are not confined only to the spring months.

However, the careless beekeeper who has failed to give his bees the proper attention in the fall lays himself open to an attack of bee fever in its most malignant form with all the symptoms present. It may result in some loss of sleep due to anxiety over the condition of his bees that may be short of stores. And so, it is little wonder that the careless beekeeper rushes out to his apiary on the first sunny day to ascertain the exact condition of his colonies.



Illustrating how feed can is removed before shipping cage of bees is put into empty space in hive.

With the Good Beekeeper It Is Different

The efficient beekeeper who has provided his bees with the necessary requirements the preceeding fall, namely, ample stores of good quality, adequate protection against cold weather and good prolific queens, has little to worry about in the spring. He knows it is preferable not to open hives too early unless such is necessary to supply food to avoid starvation. He simply notes the manner in which the bees are flying from each hive. If the flight is strong, he can be reasonably sure that all is well. If he finds a hive that has only a few bees flying from the entrance, and the front of the hive is spotted, due to dysentery, he knows that conditions within are not what they should be. He marks that hive

for attention as soon as possible.

If he finds a hive with no bees flying, chances are the colony is dead. If he is sure the colony has died, the hive entrance should be closed up tightly to keep out robber bees.

If he finds a hive that feels rather light when the end of the hive is lifted, it should be opened as soon as weather will permit, to investigate the amount of honey in the combs.

It is not until the beekeeper has made a thorough spring examination of his bees that his anxiety is relieved, although his bee fever may continue to run rather high. Even though bees were given all necessary requirements in the fall, it is well to make a spring check as soon as weather permits to see that each hive is strong in bees, has plenty of food, and a good queen. If any of these requirements are lacking, the maximum crop of surplus honey will not be secured. It is well to make a record of each colony, either on the inner hive cover or in a record book. It is an advantage to have each hive numbered. Record keeping eliminates guess work.

The Importance of Package Bees

THE AGGRESSIVE beekeeper is anxious to have all of his bee equipment in use during the season, in order to get returns commensurate with his investment. He would not think of tolerating empty hives in which bees have died during the winter, weak colonies, or poor queens. He does not have to. Fortunately, package bees and queens can be secured from southern breeders at a reasonable cost, to make good any winter losses. Package bees then, are a boon to the northern beekeeper because they help to relieve the worry and anxiety connected with spring bee fever.

What to Do with Weak Colonies

Even with the best apiary management there is bound to be a small percentage of under-strength colonies that are of little value for securing a crop of honey, unless they are strengthened with more bees. The queen in the weak colony may be normal. All she needs to make good is more bees to take care of the eggs she is capable of laying. A queenless two-pound package of bees united with each weak colony, from six to eight weeks before the main honey flow starts, may make the difference between success and failure in securing the maximum crop of honey. It is amazing how weak colonies will forge ahead after package bees have been added.

Showing how bees are shaken into a bee shipping cage through a funnel.

A package of bees ready to be installed.

What to Do with Dead Colonies

If any colonies have died during the winter, the dead bees should be removed and the hive entrances closed tightly to keep out robber bees until package bees with queens are put into the hives.

XUM

If the cells in the middle combs of the brood chamber are found to be free from dead brood or the dried-down remains of larvae (scales), they are probably free from disease. If, however, the remains of dead larvae lying lengthwise on the lower sides of the cells are found dried down into hard scales that adhere tightly to the cell walls, this symptom indicates American foulbrood. If in doubt, a sample of the comb should be sent to the Division of Bee Culture and Biological Control, Beltsville, Maryland, for diagnosis. For this purpose a piece of comb 4 x 5 inches square containing a number of dead larvae should be sent in a wooden box.

The combs in diseased hives should be promptly burned in a pit and the ashes covered thoroughly. The hives should be scorched out by painting the insides with gasoline and throwing a match into it, in order to make them safe for future use.

Spring Feeding

If any colonies need feeding, they should be supplied with either combs of honey reserved for this purpose, or sugar syrup given in a feeder. A simple method of feeding consists of filling either a five or ten pound friction-top pail with warm sugar syrup, made by stirring two parts of granulated sugar into one part of boiling water, until all of the crystals are dissolved. Punch about two dozen holes in the cover of the friction-top pail, with a two-penny nail. Invert the pail of syrup over the hole in the inner cover, then put an empty hive body on the inner cover under the outer cover to protect the pail of syrup.

During the period of intense brood rearing prior to the main honey flow, bees use an amazing amount of honey. It takes about a comb of honey for the development of a comb of brood. It is said on good authority that a pound of pollen is required to produce a pound of bees. If natural pollen is scarce, a pollen substitute or supplement should be fed. Hence the necessity of a superabundance of stores for each colony.

Failing Queens

IF A QUEEN is found to be failing in the spring, she should be replaced. Sometimes a queen may appear to be all right in the fall, but will turn out to be worthless the following spring.

Any queen that lacks vitality and is wobbly as she walks over the combs, greasy in appearance, and an indifferent layer, should be replaced with a young prolific queen from a good honey-gathering strain. **Remember the queen is the soul of the colony.** Directions for introducing queens are attached to the mailing cages in which they are received.

Early Spring Protection for Bees Essential

Ample protection for bees during the cold, chilly weather of spring is essential. No matter how good a queen may be, she cannot lay to her full capacity unless the temperature of the hive is right. The correct temperature for brood rearing (about 92°F.) can be more easily maintained in a hive that is protected from the cold winds of spring. Winter packing, if used, should not be removed until settled warm weather comes.

When all of the spring requirements are supplied at the proper time, colonies are likely to be boiling over with bees ready for the main honey flow and beekeepers will be quite happy in spite of the attack of spring bee fever.

Spring bee fever is likely to occur each year. Ordinary bee fever may continue throughout the year and may be said to be incurable. Fortunately, the disease is not fatal. As a matter of fact, beekeepers who do not have a touch of bee fever are not likely to be very successful as beekeepers. **Perhaps one trouble with our industry at the present time is that there are not enough beekeepers over the country who have bee fever.**

Our Cover Picture

Getting bee fever? It will soon be time for that first spring inspection. Be sure to check for the presence of disease, condition of queen, and amount of stores.—This is a Black Star Photo, Graybar Bldg., New York.

Bee Facts

(A Digest of Scientific Research)

Edited by Walter Barth

Wax Moths Produce Antibiotic

A NEW ANTIBIOTIC or anti-germ chemical like penicillin, called primycin, has been discovered by Doctors T. Valyi-Nagy, J. Uri and I. Szilagyi of the University of Debrecen in Hungary. The antibiotic is made by microorganisms found in the larvae of the wax moth, **Galeria melonella.**

Viruses seem to be most affected by primycin as well as against such larger organisms as the staphylococci that cause boils.

The Hungarian scientists reported good results in treating superficial infections in man. Still the new antibiotic may have limited usefulness since trials in animals showed it to be toxic. As a result it may never be used for more than superficial infections in humans.

Science News Letter. Dec. 25, 1954. Pg. 408

Sting of Queen Bee is Barbed

GLEANINGS HAS received many letters that ask if the sting of the queen bee is barbed. Our replies followed the general belief that the sting was not barbed at all. Dr. M. H. Haydak of the University of Minnesota called the error to our attention and so it is passed on to Gleanings readers.

"The sting of the queen is longer than that of the worker and is more solidly attached within the sting chamber. Its shaft is strongly decurved beyond the bulb. The lancets have fewer and smaller barbs than those of the worker, but the poison glands are well developed, and the poison sac is very large."

Snodgrass. R. E. Anatomy and Physiology of the Honeybee. McGraw-Hill Book Co. 1925. Chap. IV. Pg. 123.

No Vitamin E in Royal Jelly

ROYAL JELLY is probably devoid of vitamin E according to a report by Mykola H. Haydak and Leroy S. Palmer of the University of Minnesota. They indicate, however, that this vitamin is present in bee bread (a mixture of pollen and honey), but in insignificant amounts.

The belief that royal jelly contained vitamin E started from the fact that queen bees can lay up to 2000 eggs per day during the peak of the season. Royal Jelly is a glandular secretion of worker bees which is fed to the larvae of queen bees. Although lacking vitamin E, the substance does contain about 15 per cent fats.

Haydak, Mykola H. & Leroy S. Palmer. Vitamin E. Content of Royal Jelly and Bee Bread. J. Econ. Ent. 31(5) :576. 1938.

Bee Venom and Disease

ALTHOUGH THE beneficial effect of Hymenoptera venom has been recognized for centuries, its method of action is still not known.

Basing their statement on clinical, anatomic, and experimental data, a group of French scientists point out that repeated injection of purified venom from bees produces a spectacular effect on the so-called collagen diseases, as shown in their patients with progressive polyarthritis. The venom acts as a factor of reflected tachyphylaxis (immunization) and of diffusion. It is a neurolytic or myelolytic agent (agent for nervous diseases).

Animal experiments have shown that purified venom, when it comes in contact with nerve centers or peripheries, causes dissolution of myelin sheaths and disintegration of neuron cytoplasm. Used as a thereapeutic agent its action is less violent, but the venom works on the nerve plexuses that are spread so abundantly throughout the collagen tissue and on the cerebrospinal centers, which often present disturbances or even lesions in the course of chronic progressive polyarthritis.

Therapeutics. Medical Literature Abstracts. J.A.M.A. Vol. 156, No. 9. Page 921. Oct. 30. 1954.

XUM

Let's talk about honey plants

HARVEY LOVELL, University of Louisville, Ky.

Snowvine. In the December column I asked about the correct name for climbing boneset. Mr. Fred L. Ephardt of Natchez, Mississippi, writes that, "I wish to let you know that climbing boneset or snowvine is well known to me. I learned in Louisiana about climbing boneset, saw it bloom there and know that it is a wonderful honey plant. I found it even in South Dakota where it had grown all over the bushes along a creek and was covered with **snowwhite** blossoms. In Louisiana, peppervine is a wonderful honey plant but I have never known of anyone calling it snowvine. In Arkansas in the region of Arkadelphia tons of honey are raised by beekeepers from peppervine." Thank you, Mr. Ephardt, for confirming my opinion that the use of the name snowvine for climbing buckwheat is correct.

Texas. In response to my request for information about the earliest date that bees brought in pollen in 1955, Mr. R. W. Green of Dallas wins with a perfect score. His bees started bringing in pollen on January 1 and every good day thereafter. He adds that he has ten acres of waste land on which he would be glad to test out the seed of any honey plants that anyone would care to send him.

North Carolina. Dr. A. R. Black of Charlotte writes, "I read your column in the January Gleanings about reporting when bees first started bringing in pollen. I checked about 20 colonies of bees over the weekend of January 8 and observed that they were bringing in a dark pollen which I think came from elm or maple. All my colonies had brood in at least two combs."

Mr. S. C. Squires writes from Chapel Hill, North Carolina, "I like your articles in Gleanings very much and think you have the right idea about knowing the source of your pollen supply. The first pollen I noticed came in this year on January 2. There was only one bee and she had yellow pollen. I saw two bees come in with white pollen on January 8 which I feel sure came from mistletoe. The first plant that furnishes any quantity of pollen in this section

Dead nettle or henbit.

is Chinese honeysuckle which we call fresh-breath-of-spring and which you illustrated in your column in the January Gleanings. Here it usually starts blooming from the 15th of January to the first of February, but only helps those beekeepers who are near towns."

Montana. Mr. T. J. Rowe of Arlee mentioned that his bees benefit from buttercups in the spring. He adds, "The ground in favored areas is a solid mat of buttercup, usually even before the snow is gone, and bears are very fond of it after coming from hibernation. Pollen comes from it in profusion and in good years brood nests get quite a stimulation. South and west of Missoula this buttercup carpets the ground from the middle of February and the blooming period extends until about April 1, though it does not normally yield more than ten days." It is surprising to learn that honey plants bloom so early in a state as far north as Montana. This is my first information on buttercups as honey and pollen plants.

Dead nettle or henbit (Lamium pur-

(Continued on page 190)

FROM Foreign LANDS

Translated and Edited by Erika Barth

Sherlock Holmes, the Beekeeper

IN THE various books on Sherlock Holmes several references are made to the knowledge and interest in bees possessed by the great detective. So it is evident that the author, Sir Conan Doyle, must have had a deep interest in bees. So reports E. W. T. Morris.

During the holding of the Festival of Britain a few years ago, a replica of Holmes' rooms at 221 Baker Street, London, was opened to the public. In a newspaper article on the "Sherlock Holmes" exhibition, reference was made to his beekeeping interests, and actually went so far as to say that he was at one time the President of the British Beekeepers' Association. While the records do not support this, according to E. W. T. Morris, the Association feels honored about the statement.

The end of the final adventure, "The Red Widow", comes in this way: "Through the window that overlooks the modest lawn of our farmhouse, I can see Sherlock Holmes strolling among the bee hives. His hair is quite white, but his long thin form is as wiry and as energetic as ever".

The Irish Beekeeper. Jan. 1955. Vol. 9, No. 1., Pg. 13.

Bee Venom for Sale

APPEARING IN German medical journals are advertisements, like the one illustrated here, of a standardized highly purified bee venom in dry ampules for intracutaneous injection. The product is called "Apisarthron".

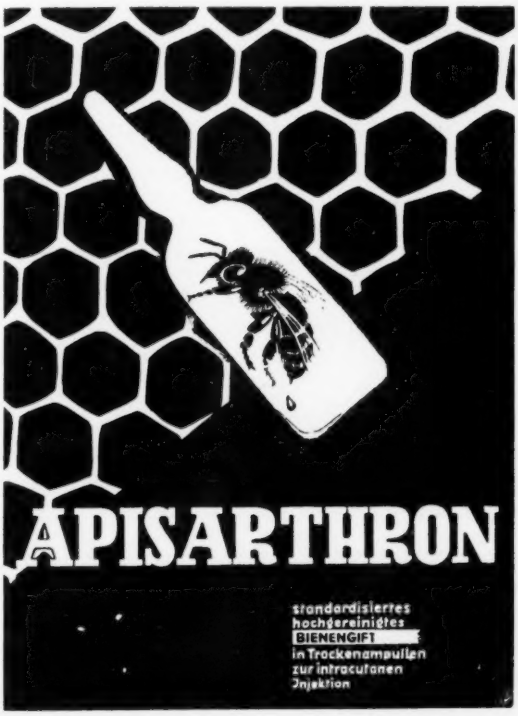
The page following the advertisement states that this is a standardized bee venom for use in myalgia, lumbago, periarthritis of the shoulder, chronic arthritis, neuralgia, and neuritis. Also for use in desensitization in allergic diseases as hay fever, hives, and bee-sting sensitivity. The ampules contain apparently the venom from 3 to 27 bees and for a test injection, 1/50 of the venom from a bee. An ointment containing bee venom is also available.

Honey for Heart and Liver Diseases

IN THE Munich, Germany, medical journal appears an advertisement of a honey product specifically recommended for the treatment of certain heart and liver diseases. The preparation is known as the M2 Woelm-ampule and is produced by the Woelm Pharmaceutical Company.

The ampule comes in two strengths (20 and 40 per cent) of an injectible solution of honey. It is for intravenous injection and it contains the "specific biologically active materials of honey in an unchanged form".

Munchen Med. Wchnschr. (Special issue) 95:98. 1953.



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XUM

From the Field of Experience

Real Bear Trouble

DIETRICH BRUNNER, Wallingford, Pa.

SINCE 1946 my father and I have kept from six to ten hives of bees as a hobby at our summer home in the Catskill Mountains of New York, and we have never had any large disappointments like those I read about in your magazine. We never found AFB, never had much trouble with wax moths, and never experienced an excessive loss with wintering.

When it happened to us, it really happened. On a weekend last October my father and I went up to the Catskills from our home here in Pennsylvania to remove about 500 pounds of honey that we had expected from the fall goldenrod flow. As we came up the road to our home, we were greeted by broken frames lying all over the place. Of course, we rushed to the bee yard right away. What a mess! No complete frames were left, no honey remained, and not a single bee was to be seen. Unfortunately we didn't have a camera with us, but I can tell you that those bears had completely ruined everything. All weekend we picked up the remains of our frames, piled them on the terrace, and salvaged all the wax that we possibly could. It seemed as if the bears had gone to the apiary, taken a frame or two each time, and then retired to the woods. Those frames were spread in every direction for a radius of about one half mile, and I don't believe that we ever found more than half of the original number.

That same evening my father saw the largest bear he had ever seen, not even 100 yards from the house. When he first heard s o m e t h i n g coming through the brush, he thought by the amount of noise that it must be a team of horses. A large bear, perhaps the same one, killed two cows in a neighboring town a few weeks later.

Since we had never had any trouble with bears before, we hadn't expected this, and I suppose we weren't the only ones who weren't prepared. Three other apiaries experienced the same fate.

Now, of course, we had to build our apiary again. The inside and outside covers, as well as the hive bodies and the bottom boards, were not too greatly damaged. We decided to have the wax that we had salvaged and that which we had saved through the years worked into foundation. Then by dig g i n g further into our bee money (money which we always set aside for future purchases which includes any money made from the sale of honey) we purchased new frames. Now all we lacked were the bees, which we purchased in packages from a southern shipper.

To be sure that the bears wouldn't completely ruin everything again, we

The bee yard as it is now with a high barb wire f e n c e and an electric fence around that.

began building a high barb wire fence. We set heavy steel posts into cement every six or seven feet and then strung the wire horizontally every six inches. Then came the hardest part—weaving barb wire vertically every few inches and then putting heavy logs at the bottom to hold the wires taut.

We had thought about an electric fence and when we read recent articles in Gleanings about its effectiveness, we put that around the outside too.

If all those wires don't keep bears out, I guess nothing will.

Beekeeping Organizations Can Reduce Juvenile Delinquency

W. H. DAVIS, Providence, Rhode Island

WE WELL KNOW the reaction to a simple statement made to a casual acquaintance such as "I'm a beekeeper" or "I keep bees". Almost instantaneously we are bombarded with questions on the subject.

This summer while hiving a swarm on a busy street a few blocks from my apiary, I was amazed at the large group of spectators that gathered to watch the operation. Storekeepers left their shops and housewives hung out windows in curious awe. Large groups of teen-agers gathered and even the bartender in the neighborhood bar and his clientele left the premise to watch the event. Of course, it was a new experience to those who watched to see a swarm of bees shaken off the branch of a tree and the little insects march in the hive so orderly and the person hiving the swarm doing all this without a single sting. I got the bees down the street and home safely in a wheelbarrow followed by a group of teen-agers which made me feel very much like the Pied Piper. My thoughts were on the youngsters following me down the street and their keen interest in what was taking place gave me great satisfaction.

It was my paper boy who had alerted me to the fact that there was a stray swarm in the neighborhood. I was impressed by the behavior of these teen-agers. While hiving the swarm they were all eager to assist me. It was at this point that my thoughts reflected on the possibilities our beekeeping associations had in doing service to teen-age groups in the community. The study of the honey bee has been made a part of the extra curricular program of many public schools. Such a project as work on a blackboard mural depicting old type skeps and modern hives side by side with bees buzzing about was made a part of the program of one of our local grammar schools. Beekeeping is a subject that teen-agers and those not so teen-age can converse on with little effort.

I believe our beekeeping associations have a great opportunity to do some important missionary work among young people. We hear and read astounding reports of the crimes committed by our youth. Wouldn't it be a worthwhile effort to do service to these young people? I believe a step in the right direction would be to contact the principal of a junior or senior high school in the community and through this source invite a group of boys and girls to one of our meetings.

A committee composed of members of our association could plan a program which might include an appropriate film or some member could be singled out to explain the various equipment used by the beekeeper. Included might be the project of assembling a hive. An-

David E. Bodenhomer of Princeton, Ky., works with the Boy Scouts on beekeeping projects

other member might devote a few minutes to a talk on the advantages or disadvantages of the use of certain color paints and why the use of white or aluminum paints predominate. All these suggestions would be good material for the winter sessions when little activity is present in the meeting. Perhaps a project could be set up where adults and teen-agers work simultaneously on the job at hand.

It may be a fact that all teen-agers who participate may never become "keeper of the bees" but a foundation may be laid for an increased number of honey consumers in future years. Your organization would be doing a most important service to the community and at the same time lending a helping hand to brother organizations working with youth toward combatting the problem of juvenile delinquency.

Honeybees are the theme for the 4-H pin in Utah.—Photo by George F. Knowlton, Logan, Utah.

Direct Release of Queen without Syrup

JULIUS LYSNE, Stockholm, Wisconsin

ACCORDING to all the bee books the queen should not be released at the time the package is installed unless the direct release method is used. The direct release method requires the pouring of thin syrup or warm water on the bees so they cannot fly. This is a lot of extra work and if syrup is used the bees may become too sticky. We have never used this method.

A better plan in my opinion, is to install the package about sunset when the bees do not take to the air readily. If the weather is warm package bees do sometimes swarm out and it is a good plan in such a case to stuff the entrance lightly with grass.

Before the bees arrive there should be a hive body with wired foundation set on the bottom board. Over this should be placed an empty body for the feeder can.

To install the package open the shipping cage and remove the queen and the can of syrup. Remove the zinc from the queen cage and stuff in a bit of paper—just enough to hold the queen in the cage for a few hours. Place the queen cage on top of the frames and shake out about half the bees from the shipping cage on the queen cage so they can cluster around her and keep her warm. The bee shipping cage is laid on its side on top of the frames. The bees will soon join the cluster around the queen.

In a matter of a few hours the bees will pull out the bit of paper and release the queen. A can of syrup must be placed on top of the frames. The can that comes with the package may be used. We strongly advise the use of drawn combs for packages. However, the beginner often has no choice but foundation. In either case, heavy feeding is advised. Punch a large number of very small holes in the lid of the feed can, fill with thin syrup and invert on top of the frames. Close up the hive and do not look for the queen for a week. By this time there should be brood and eggs and the colony well established. Keep feeding syrup as long as the bees will take it. When there is ample nectar from the field the bees will no longer take down the syrup.

Be sure all frames are drawn out before adding another hive body of foundation. Don't guess about this. Examine each comb.

[In our opinion, it is well to have the bees quite well filled with sugar syrup at the time they are installed. Pouring warm syrup over the bees may make them too sticky, especially if the weather is cool. Spreading some syrup on the screens of the shipping cages before bees are installed usually causes the bees to become filled with syrup.—Ed.]

An Inspector's Point of View

WENDELL P. SMITH, Deputy State Apiarist of Ohio, Sunbury, Ohio

AT ONE of our Ohio beekeepers' meetings, a speaker said that our worst enemy in beekeeping is not American foulbrood but ignorance and indifference. He might well have added carelessness and just plain cussedness. Most of our problems have been with individuals who fall into one of the above classifications. Now we had better add another group, the "medicine men" or "bee doctors".

Combine ignorance with any of the other classifications and let them feed sulfa and you have a distinct menace to the beekeeping industry.

We have some "medicine men" who are not only careless in their operations but are indifferent to the losses they cause their neighboring beekeepers. They brag of feeding sulfa and they nearly always have disease in their apiaries, and make no effort to keep from spreading the disease.

Records will show that "cured bees" have a habit of showing disease even in localities where there is no other disease nearby, showing that the "cure" was not permanent or sure. Unwary purchasers of apiaries have suffered heavy losses when they acquired ownership of sulfa fed bees and failed to keep on dosing with sulfa.

We have studied the spread of disease in various parts of the state and know that American foulbrood may result directly or indirectly from the use of equipment from diseased hives. Over a period of years there have been a good many colonies die of AFB. Some of this equipment may be stored away possibly for as long as 25 years. When it finds it's way back into a bee yard it starts another cycle of disease. These diseased colonies, unless found and destroyed, die and the disease infection is carried to other colonies.

In order to prevent further spread of disease by this means, the Ohio Apiary Inspection Law, as amended in 1951, requires a sales permit before any person can sell, give away, or barter bees and used beekeeping equipment. Before a sales permit is issued an inspection is made to determine that no disease infection exists. This protects the purchaser and is showing good results in checking the spread of disease by contaminated equipment.

We know certain "professors" are sure to say that the beekeepers did not use sulfa correctly or the results would have been different. Let me remind them that beekeepers are individualists, who do not always do as they know or as they are supposed to do. We would not have bees kept in such a variety of containers as hot water tanks and five-gallon stone jugs, if certain beekeepers did not have the desire to experiment a little or to be different or even contrary, as the case may be. We find bees in immovable frame hives, cross comb hives, and old incubators, as well as a variety of boxes and kegs. The professors would have these people feed sulfa. We might as well ask them to paint their hives pea green or heliotrope.

We can do much to correct the lack of knowledge regarding bee diseases and thus help eliminate one of our problems. Our beekeepers' associations can and should promote beekeeping clinics in the beeyard where disease problems can be seen first hand. Our 4-H and F.F.A. groups should be encouraged and invited to join the clinics.

Pollen Substitutes or Supplements May be Needed

IT HAS BEEN found that in some areas during some spring seasons there is a shortage of pollen in most hives. This is usually due to a pollen shortage the previous season, especially during the late summer and fall months, or to faulty apiary management.

It has been said on good authority that one pound of pollen is required to furnish the protein to produce one pound of bees. If bees are short on pollen, colonies cannot build up to maximum strength to secure the maximum honey crop.

Such colonies should be fed a pollen substitute or supplement. Most bee supply houses carry a stock of pollen substitutes and directions for preparing them. Directions for preparing and using a pollen supplement may be obtained from Dr. C. L. Farrar, North Central States Laboratory, Madison 6, Wisconsin.

XUM

Progress through research becomes theme of convention

WALTER BARTH, Associate Editor

"TO HAVE or not to have a state embargo on bees?" . . . . that was one of the questions facing nearly 400 beekeepers and guests who attended the annual convention of the American Beekeeping Federation in Chicago, January 25 to 29. This was an anniversary program for it was in Chicago, just 12 years ago, that the Federation was founded.

"Whatever is to be done on embargoes depends on the beekeepers themselves for bee inspectors are only enforcement agents," so commented F. B. Paddock, newly reelected president of the Apiary Inspectors of America to the question above. "The beekeepers themselves initiate bee laws so they shouldn't cry if it doesn't work. However, uniform state regulations of bees and disease should be the goal of all inspectors."

The honey queen, Miss Monica Siegham of Chicago.—Photo by David Meineke.

Leslie H. Little, State Apiarist of Tennessee, advocated uniform regulations for package bees and queens. He pointed out that some states won't honor health certificates for bees from other states yet they want others to honor their own. Inspection certificates should be honored by every state even though we know the limit of them.

Besides discussions on package bee shipments and embargoes, honey promotion and research comprised the greater part of the program. The audience was startled by the revelation from Henry A. Schaefer that in the forseeable future beekeepers will be pasteurizing honey without heat. This new method of honey handling is still in the laboratory stage and all efforts are being made to adapt it to practical use.

As far as marketing is concerned, the beekeeping industry is in the "dangerous age", according to Chester Freeman of the Food Products of the U.S.D.A. Three years ago beekeepers had a serious marketing problem but today, he pointed out, it is easy to sell your honey crop. For that reason beekeepers must continue to promote their product since a honey customer in 1954 does not mean a repeat sale in 1955. The consumer must be sold over and over again.

The role of the American Honey Institute was aptly told by its director, Mrs. Harriett M. Grace. She pointed out what the effects of weather, special sporting events, and holidays have on the types of recipes and news releases issued by the Institute. Beekeepers were also urged to pack a quality product, establish a trademark as an attention-getting device on a label, use labels that show uses of honey, and offer free recipe leaflets to increase the use of honey.

(Continued on page 174)

The annual banquet of the American Beekeeping Federation held in the ballroom of the Sherman Hotel in Chicago.
—Photo by Oscar & Associates, Inc., Chicago.

Left to right: H. R. Swisher, Springfield, Ohio; C. J. Burgin, College Station, Texas; John W. Buchanan, Bee Supplies Sales Manager, A. I. Root Co., Medina, Ohio.

Here are the genial hosts of the recent American Beekeeping Federation meeting in Chicago. Left to right: A. C. Ullrich, McHenry, Ill.;John Lis, Des Plaines, Ill.; A. J. Smith, Worth, Ill.; and Leroy Stockdale, Palos Park, Ill.

Left to right: Dr. J. W. White, Philadelphia, Pa.; A. V. Dowling, Valdosta, Ga.; Roland Stone, Superior Honey Co., Los Angeles, Calif.; and Roy R. Reed, Los Angeles, Calif.

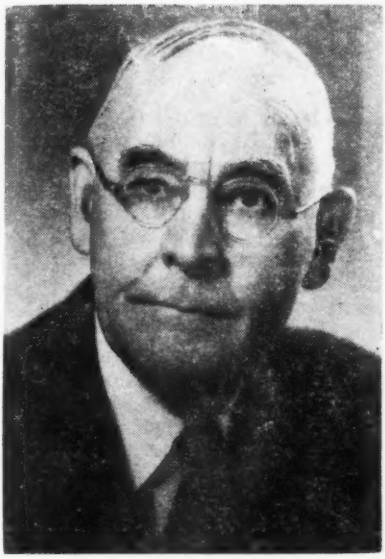
One Control for AFB and EFB

A "one-shot" treatment for both American and European foulbrood is now possible with terramycin, reported Dr. T. A. Gochnauer, Research Associate, University of Minnesota. He recommended feeding terramycin in the form of a dust mixed with powdered sugar, in a spray mixed with thin sugar syrup, or in hive feeders mixed with heavy syrup. The specialist favors the first method, since the antibiotic is more stable in a dry form. The best results were obtained in commercial yards when the mix was fed in June. Earlier treatment can be toxic to the colony since terramycin is more toxic than sulfathiazole while later treatment can be ineffective.

Credit for the success of this outstanding meeting goes to the combined efforts of the Cook-Dupage Beekeepers' Association, the officers of the American Beekeeping Federation, and to the special program committee under the direction of Newman Lyle of Sheldon, Iowa. (See the Editorial page for more comments). The whole meeting was topped off with the announcement that Miss Monica Siegham of 1446 East 54th Street, Chicago 15, Illinois, was the first National Honey Queen. We of Gleanings take this opportunity to salute the Federations' charming selection.

Elections were held on January 25th, and Henry A. Schaeffer was re-elected to serve a third term as president. S. Joaquin Watkins, California, was elected vice president. Also re-elected to secretary-treasurer was the very capable Robert Banker of Minnesota.

Dr. Leonard Haseman Retires



Dr. Leonard Haseman

DR. LEONARD HASEMAN, Chairman of the Department of Entomology at the University of Missouri for 44 years, recently retired. His total of 44 years as Department Chairman is the longest on record of any department chairman in the Missouri College of Agriculture.

Haseman, a native of Indiana, first came to Missouri in 1906. During 1907 and 1908 he was acting chairman of the Entomology Department but left for two years to do graduate work at Cornell University before taking up his position as Chairman in 1910.

He received his A.B. and A.M. degrees from the University of Indiana in 1905 and 1906 and his Ph.D. from Cornell in 1910. Part of his first year out of Indiana was spent on a study of the fruit scale insects with the University of Florida. This study—one of the earliest on the subject—not only secured his master's degree but also was the basis for his call to Missouri where San Jose scale had just reached the status of a serious problem for the state's fruit growers.

One of Dr. Haseman's most important personal contributions to research was his development of an original application of the sulfa drugs for the control of American foulbrood in bees. His plan of feeding bees sulfathiazole is now used quite generally.

Haseman also prepared for publication by the Missouri Experiment Station the first comprehensive handbook on beekeeping written expressly for farmers and backyard beekeepers. This bulletin has been on the college list longer and has run through more editions than any other bulletin at the Missouri Station.

Atomic Bees

ART WHITE, Jackson, Michigan

IT SEEMS that down in Knoxville, Tennessee, there's a story going around about how a swarm of bees put the government in the honey business.

Seems that a swarm of bees found an old locker in the Oak Ridge construction project and set up housekeeping, and in the course of time started storing honey for winter. One of the workers on this atomic construction job—who was also a beekeeper—started to keep track of the bees.

One day he brought in a hive and a tub. After hiving the swarm he collected about 50 pounds of honey that they had stored. He planned to take the whole works out with him, but he hadn't reckoned with the material checker on this atomic job—who was somewhat of a practical joker—and who saw a chance to have a little fun.

"Got a requisition?" asked the checker.

"No. Do I need one?" asked the beekeeper.

"Well," the checker replied, "My orders are that no government property can be taken out of here without a requisition."

"But this isn't government property," protested the beekeeper. "These bees just flew in here and settled."

"True," piqued the checker, "But their nest is attached to government property, and the honey is attached to government property. Therefore, the bees and the honey are obviously government property, and cannot be removed without a requisition."

(Continued on page 186)

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XUM

Just News

The stimuli for the **Eastern States Beekeeping Conference** which will be held at the University of Maryland, June 17, 18, and 19, had its origin in Rhode Island. In July 1954 the R. I. Beekeepers' Association played host to the Massachusetts and Connecticut Beekeepers' Association in the form of a Tri-State Meeting which was held at the University of Rhode Island, Kingston, Rhode Island. It goes without saying that the many who attended this conference went away well pleased and made requests for similar conferences. The Tri-State Meeting was planned for the benefit of the small beekeeper.

Mr. James I. Hambleton, Head of Section, United States Bee Culture Laboratory, being well pleased with the results and the excellent program took immediate steps to have a similar meeting held at the University of Maryland at a time which would be suitable to all Eastern States Beekeeping Associations. Expenses at the University have been kept to a minimum and latest report is that $17.00 will cover dormitory fees and meals.

The planning board for the meeting consists of the R. I. Beekeepers' Association, Maryland Beekeepers' Association, University of Maryland, and the United States Bee Culture Laboratory.

There has existed the thought among R. I. Beekeepers' Association members that the time was ripe for forming an organization which could hold conferences annually and which would be sympathetic to the small beekeeper's problems. At the present time he does not have a place in the sun.

It is hoped that all eastern state beekeeping associations will get on the band-wagon and get their members to participate in this important venture. The tour of Beltsville in itself should be a drawing card but there will be many opportunities for all to participate in the program and many interesting added attractions are being planned. — William K. Davis, Publicity Manager, R. I. Beekeepers' Assoc.

The annual **Wyoming Beekeepers' Association** meeting will be held on March 11 and 12 at the County Building, Worland, Wyoming. An interesting program has been arranged with several informative speakers scheduled for each day. A banquet for members and their wives is planned for Friday evening. — Richard E. Schaefer, Sec.-Treas.

The **First Virginia Honey Show** will be held in connection with the **Virginia State Beekeepers' Association** meeting held March 10 in Princess Anne Hotel at Fredericksburg. Outstanding speakers will appear on the program. A cordial invitation to all.

The **Worcester County Beekeepers' Association** is sponsoring a program in beekeeping, especially for beginners, at Worcester Natural History Museum the evenings of March 5, 12, 19, and 26, also April 2, 9, 16, and 23. Good speakers will present timely topics.

The regular monthly meeting of **Midwestern Beekeepers' Association** will be held at Jackson County Courthouse, 12th and Oak, Kansas City, Mo., in the Court Room of Stewart D. Blackborn (South Door) on March 13, 1955 at 2:30 p.m.—Mrs. William Brite, Secretary.

The annual **Ohio Farm and Home Week Beekeepers' Short Course** will be held Tuesday, March 22, and Wednesday, March 23 in Room 100, Botany and Zoology Building, the Ohio State University, Columbus, Ohio. An unusual program of interest to all beekeepers has been arranged for both days. Dr. C. L. Farrar, Apiculturist, Madison, Wisconsin will appear as our guest speaker this year. One of the many features will be a discussion of "Weather Forecasting and Planning as it Effects Beekeeping" by Mr. Howard S. Kenny, Meteorologist-Forecaster of the U. S. Weather Bureau. In addition, many others will appear on the program. There are many other Farm and Home Week features that may hold the interest of those who expect to attend.

The **North Carolina State Beekeepers'** Association plays host to the spring meeting on March 14 at 10:00 A.M. in Room 211, Gardner Hall, University of North Carolina, Chapel Hill, North Carolina. An interesting program is being planned and all persons interested in beekeeping are cordially invited to attend. A guided tour of the Morehead Planetarium is planned for 4:30 P.M.—Mrs. Dorothy F. McLean, Acting Secretary.

A letter from Roy S. Weaver, Sr., Navasota, Texas, states that E. G. Le Stourgeon, former editor of Beekeeper's Item, is in poor health and living with his daughter. His address is E. G. Le Stourgeon, c/o Mrs. Elma Hancock, 7047 Quince St., Houston, Texas. Those who knew Guy during the days when he was active in our industry may wish to drop him a line. We are sure he would appreciate it.

Honey on WTMJ—T.V. — "Mrs. Harriett M. Grace, director of the American Honey Institute, reports that requests were received for more than 3000 booklets and circulars as a result of a recent 45-minute honey demonstration on the Breda Griem show. Leaflets were also sent out with recipes for the two honey cakes made on the program. Mr. Walter Diehnelt set up a beautiful display of honey as a background for the show".—From January 1955 **Wisconsin Horticulture.**

Jay Cowing, Jenison, Michigan, a prominent beekeeper and bee inspector for 20 years died recently at the age of 81.

R. D. Bradshaw & Sons, Wendell, Idaho, are to be congratulated on reaching their golden anniversary, rounding out 50 years of service to the honey industry. They are producers and packers of some of the finest honey in the country.

"Bees Are My Business", is a fascinating book by Harry J. Whitcombe, and the story of a young boy who started with one hive of bees and later became one of California's leading commercial beekeepers. The book does not have a dull paragraph. It is filled with adventure and romance and shows what can be accomplished when one is fired with determination and enthusiasm. Whitcombe is one of the first to ship bees by plane. The book vividly describes how beekeeping is related to agriculture. It is priced at $3.75, and published by G. P. Putnam's Sons, 210 Madison Ave., New York 16, N. Y.

The **Palmetto State Beekeepers' Association** annual spring meeting will be held at 9:00 A.M. on March 16th at the Jefferson Hotel, Columbia, South Carolina.—W. C. Johnson, Extension Entomology and Beekeeping Specialist.

Honey Jars Found to be Money Jars

An Onsted area (Michigan) beekeeper almost made a honey of a deal when he ordered 1,800 jars of the sweet stuff shipped from a Waco, Texas, dealer.

M. L. Hubbard, who lives on M-50 at Springville, just about broke out in hives when he learned that two of the jars contained more than $500 in half dollars.

It was the sweetest consignment of honey ever shipped out of Texas. But he had to give it back when the owner put the bee on him.

Here's how it happened:

Jay Renfro, the Texas beekeeper, sold a sizeable order of honey to E. M. Warrick, Waco honey broker.

For a while the transaction was a paper deal and the honey remained in Mr. Renfro's warehouse. Then Renfro left town for a few days.

About the same time, Mr. Hubbard got an offer for the honey and wanted it shipped to him immediately. Warrick didn't think Renfro would have any objections. So he entered Renfro's warehouse and shipped 1,000 jars of honey to Michigan.

Renfro was more than a little stung by the news when he returned.

"Two of those jars you picked up," he told Warrick, "are full of my life's savings."

Warrick lost no time in buzzing Hubbard on the telephone.

Sure, Hubbard said, he'd look for the money. In a little while he located the honey jars, and he and Mrs. Hubbard sat down in their living room and

(Continued on page 189)

XUM

Asked & Answered

"Sky-Scraper" Hives

Question: Why do some people tier up their hives in the manner they do? What is the idea?—Missouri.

Answer: During a good honey flow a strong colony of bees will sometimes fill several full-depth extracting supers before the honey is sufficiently ripened to seal. When this occurs it is necessary to tier up the supers in order to give sufficient room for all the honey the bees can gather. This is especially true in a damp climate where the nectar is thin and does not ripen rapidly. In the arid regions of the West and during dry seasons in the East, such tiering up is not often necessary. Another reason for tiering up in this manner is that some extensive beekeepers prefer having enough supers to contain the entire crop of honey and leave it on the hives until the close of the season to make sure of its being well ripened.

Size of Bee-Space

Question: How much space should be above the tops of the sections in one super and the bottom of the section-holders in the super above?—Michigan.

Answer: The space between hive parts, such as between the top-bars of the frames in the brood chamber and the bottom-bars of the section-holders or frames in the super above, between the supers, between the top-bars of the frames of the brood-chamber and the cover, or between the tops of the sections and the cover, as well as between the end-bars of the frame and the ends of the hive, should be such that the bees will neither build combs in the space nor close it with propolis. If the space is too great, the bees will build comb in it, and if it is too small they fill it with propolis. The term "bee-space" is applied to that space which the bees are willing to leave free from comb or propolis. This is the basis of the Langstroth invention, thus making it possible to handle combs without cutting them loose from the ends of the hive or breaking propolis connections. In the early days of hive construction three-eighths of an inch was considered a proper bee-space, but this resulted in comb being built in the space when the colony became crowded, so the bee-space has been reduced to five-sixteenths or one-fourth inch. This was made possible by devising machinery to cut hive parts with greater accuracy. If the space is less than three-sixteenths of an inch it will be filled with propolis and if much more than five-sixteenths it is liable to be filled with comb.

Purpose of Metal Rabbets

Question: What are the tin rabbets for that belong to the brood-chamber? It seems that I can get along without them. —Minneota.

Answer: The tin rabbets are used to prevent the bees from propolizing the projecting ends of the top-bars to the hive, thus making it easier to handle the frames. By holding these projecting ends a bee-space above the shoulder in the end of the hive, the bees can pass under them and so do not propolize them much unless the rabbet becomes filled with propolis. Some do not use the tin rabbets, but in this case the rabbet in the end of the hive must not be cut so deep. If the rabbets are cut deep enough to allow for the tin, the frames will drop down too deep in the brood-chamber, leaving too much space above them.

Advantages of Large Hives

Question: I have sold my outfit of bees and expect to begin again. I have always used the Standard ten-frame hive. Is the Jumbo hive any better?—Ohio.

Answer: In some localities the Jumbo hive may offer some advantages over the Standard hive; but it is doubtful if much, if any, difference will be found in the yield from the two sizes of hives over a period of years, provided each is managed properly. In regions where the main honey flow is gathered during the fall the Jumbo hive usually gives good results. A larger brood-chamber is supposed to (1) decrease swarming, (2) make feeding unnecessary, and (3) eliminate the necessity of a queen-excluder. These are accomplished to a great extent with a large hive in localities where the main honey flow comes in the fall, since the swarming tendency is then less pronounced, the bees are inclined to store more honey in the brood-chamber than during an early flow, and queens are

not so much inclined to go into supers during a fall honey flow.

Value of Decoy Hive

Question: Is it well to set several empty hives around over the farm a little distance from the bees to catch stray swarms?—Pennsylvania.

Answer: If in a locality where there are many absconding swarms, you should be able to capture some in this way. Usually decoy hives are placed in a tree or on top of a pole some distance from the ground. However, sometimes a swarm will go into an empty hive that is standing in the apiary. Where bees are properly cared for during the swarming season there should not be many absconding swarms, and you may be dissappointed in the number that you are able to capture in his way.

To Keep an Old Breeding Queen

Question: I have a queen mother which is old, but able to do some more breeding. The bees are getting ready to supersede her. I should like to know how I can keep her alive for another season.—Jamaica.

Answer: The breeding queen should be kept in a nucleus so that she will not be required to do much work. Her colony can be strengthened in the fall by adding brood from other colonies in order to be safe for winter, but in the spring it should not be permitted to build up to more than two or three frames of brood.

Brood Diseases from Wild Bees

Question: Is there any danger of bees getting foulbrood from wild bees in the timber?—Missouri.

Answer: It is quite possible for bees to get either American or European foulbrood from bees in the timber. However, since American foulbrood spreads slowly when not spread by man, the percentage of diseased colonies in the woods is very small indeed. But there is no reason why an occasional colony in the woods should not pick up the disease somewhere. When such a colony dies and is robbed out by healthy colonies the disease is spread just as it would be in the case of a colony located in an apiary.

Bees Carrying Out Brood

Question: Why do my bees carry out some of the undeveloped brood?—Penna.

Answer: They are probably short of stores. It will be well to open the hive to see if they have any honey. If not, they should be fed at once. Brood is sometimes carried out from other causes, such as being chilled, but especially in the spring the carrying out of brood is often the result of famine.

Head and Mouth Parts of Queen Bee

Question: How do the head and mouth parts of the queen bee differ from those of the worker?—Illinois.

Answer: The head of the queen bee is smaller than that of the worker. It is more nearly round in shape instead of somewhat triangular in shape as that of the worker, the head of the queen being wider in proportion to its length. The mandibles of the queen are notched instead of being smooth like those of the worker. The parts of the proboscis are much shorter in the queen than in the worker. In general the mouth parts of the queen bee suggest weakness when compared with those of the worker.

Swarming Cells and Supersedure Cells

Question: What is the difference, if any, between swarming cells and supersedure cells?—Iowa.

Answer: Swarming cells are queen-cells built in preparation for swarming. These are started usually about a week before the swarm issues. Supersedure cells are queen-cells built to raise a young queen to take the place of an old or failing queen. Supersedure cells may be built at any time during the summer, but swarming cells are built only during the swarming season, usually in the spring. When queen-cells are built outside of the swarming season, and especially if there is no honey flow at the time, one may be quite sure that these are supersedure cells. If they are built during the swarming season it is necessary to note the condition of the brood and the number of queen-cells started, to distinguish between swarming cells and supersedure cells. If the queen is failing there will not be as much brood as in normal colonies, and it is usually scattered instead of being in compact form. The bees build fewer queen-cells for supersedure than they do for swarming, sometimes building only one or two cells at first, then starting one or two more later, so that there may be several cells varying greatly in their stage of development. In the case of swarming cells the bees usually build from a half dozen to twenty or more queen-cells.

XUM

American Honey Institute News Notes

by HARRIETT M. GRACE, Director
Commercial State Bank Building, Madison 3, Wisconsin

BY NOW you should have stopped dating your checks "1954" and should be making the "1955" with an automatic flourish of the pen. And that means that 1955 has arrived, mentally as well as actually.

You are thinking in terms of the new year, then. You are thinking in terms of how the new year will treat the food industries, and more especially, your honey.

Here we give you the opinions of several of the leaders in the food field of what 1955 holds for the food industries. The quotations are taken from articles in Food Business, a business magazine sent to manufacturers and packers.

President of Stokeley-Van Camp, Herbert Krimendahl, says, "The food industry has an outlook of fundamental soundness as we enter the new year. . . The food industry has every reason to expect a large measure of success in such a favorable climate of population growth and productivity."

C. G. Mortimer, Jr., presdent of General Foods Corporation, says, " . . . Next year will be one of steady growth for the packaged food business, and 'steady' to me means substantial but not spectacular. In addition to the prospect of general economic strength, there is the central fact that there are 7500 more mouths to feed each day in these United States. For a food manufacturer, that augers well."

George L. Morrison, president of General Baking Company, says "In '55 as always, management's top concern will be to see that higher costs of labor, raw materials, and distribution don't encroach further upon profits . . . A more likely answer to the challenge of advancing costs is an accelerated program of product diversification."

Chairman of the Board and President of the McCormick and Company, Inc., C. P. McCormick, says, "Outside of war, I see the prospects of better business in 1955, and even better in 1956. . . .Sales should be at least 10 per cent higher in the food business."

E. E. Stewart, president of the National Dairy Products Corp., says, ". . . .We face highly competitive markets, with a full supply of quality merchandise. Hard selling will be the key to success. Aggressive promotion, efficient merchandising, and inventive advertising will be essential. Service to the consumer must always be the end objective. . . .Every frill and gimmick must be eliminated, and operations brought to maximum efficiency."

Frederick R. Weisman, president of Hunt Foods, Inc., says, ". . . .While I can paint an optimistic picture for the food industry, I must, at the same time, observe that individual food companies can find themselves in a great deal of trouble if their managements do not stay alert to the very keen competition that exists and also the many changes that are taking place in food merchandising."

O. E. Jones, Executive Vice President of Swift and Company, says, "It is clear that under persistent intense competition, the company that will survive and thrive is the one that can keep its costs under control and serve its customers efficiently. By this I do not imply a cheeseparing attitude toward promotional expenses. It will still be true that it pays 'to spend money to make money' if the expenditures are planned and carried out wisely."

Nathan Cummings, Chairman of the board of Consolidated Foods Corp., says, "It is axiomatic that successful businesses, large or small, keep in tune with economic trends. This requires good organization, effective management, and competent executives. By far the most important of these three essentials is the last."

So we find underscored for 1955 better business, tough competition, continued rising costs, but with two and one-half million more mouths to feed, plenty of opportunities. So 1955 looks good; just how it actually turns out is up to you!

"Let quiet reign in the apiary. There's no need for disturbance if you've done the things which ought to have been done".—British Bee Journal.

Buy and Sell

Only responsible advertisers and honest advertisements will be admitted to these columns. References required from new advertisers not known to us. Rate: 15c per counted word, each insertion. Each initial, each word in names and addresses, the shortest word such as "a" and the longest word possible for the advertiser to use, as well as any number (regardless of how many figures in it), count as one word. Copy should be in by the 10th of the month preceding publication.

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WE BUY AND SELL all varieties of honey. Any quantity. Write us for best prices obtainable. The Hubbard Apiaries, Onsted, Michigan.

IOWA honey, one can or truck loads. Russell D. Smalley, Beaver, Iowa.

CLOVER extracted honey in sixties. Abram Brubaker, Lancaster, Pa., Rt. 2.

PURE COUNTRY SORGHUM, recleaned, 20c per lb. in 60-lb. cans. Also blended at 15c upon inquiry. LOSE BROTHERS, INC., 206 E. Jefferson St., Louisville, Ky.

FINE QUALITY chunk comb honey in one pound jars. Hiltner's Apiaries, North Creek, Ohio.

CLOVER HONEY, 60's $9.60. JOHN YANIK, 16036 EDMORE DRIVE, DETROIT 5, MICHIGAN.

HONEY AND WAX WANTED

BEEKEEPERS TAKE NOTICE—We can not guarantee honey buyers' financial responsibility, and advise all beekeepers to sell for cash only or on C.O.D. terms except where the buyer has thoroughly established his credit with the seller.

CASH for your comb honey and all types extracted. Send sample and best price. Buckeye Honey Co., 3930 No. High St., Columbus 14, Ohio.

CASH for Beeswax. Write as to quantity and we will quote price. Muench-Kreuzer Candle Co., Inc., Syracuse, N. Y.

HONEY WANTED — All grades and varieties. Highest cash prices paid. Mail samples. State quantity. HAMILTON & COMPANY, 2613 South Yates Ave., Los Angeles 22, California.

WRITE FOR Shipping tags and quotations on rendered beeswax. We buy from one pound up and if you have over 25 pounds let us work it into foundation for you at a 25 per cent saving. Walter T. Kelley Co., Clarkson, Kentucky.

HONEY WANTED, all grades in 60's. Mail samples, advise quantity, best price. A. I. Root Company of Syracuse, 1112-14 E. Erie Blvd., Syracuse, N. Y.

WANTED — White extracted or comb honey. Send sample. Millersport Honey Co., Millersport, Ohio.

WANTED—Light amber-clover and fall-flowers honey. Cloverdale Honey Company, Fredonia, N. Y.

BEST CASH DEAL for your honey (any grade) and beeswax. Alexander Company, 819 Reynolds Road, Toledo, Ohio.

BEESWAX WANTED. Highest prices paid in cash or trade for bee supplies. The A. I. Root Co., Medina, Ohio, Council Bluffs, Iowa, San Antonio, Texas.

HONEY WANTED—Extra white, white, and light amber in 60's. Send sample and quote price. Cash paid, Clearbrook Honey Farms, Clearbrook, Minnesota.

WANTED—All grades of extracted honey. Send sample and price. Deer Creek Honey Farms, London, Ohio.

WANTED—Honey in 60's. Send sample and price. Lloyd E. Allen, Tipton, Mich.

HONEY WANTED—In 60's. Send sample, state price. J. Wolosevich, 7441 So. Peoria St., Chicago 21, Illinois.

WANTED: Light amber honey in barrels. Send price and sample. Bert Lampson, Agent. 4 Columbus, Manatee, Florida.

FOR SALE

WRITE FOR CATALOG — Quality Bee supplies at factory prices. Prompt shipment. Satisfaction guaranteed. The Hubbard Apiaries, Manufacturers of Beekeepers' Supplies and Comb Foundation. Onsted, Michigan.

THE BIGGEST BEE SUPPLY Catalog published (64 pages) free for the asking. Listing many items not found in other Catalogs. No agents—buy direct and save 20%. WALTER T. KELLEY CO., CLARKSON, KENTUCKY.

FOR SALE — New heart cypress 10-frame bottom boards. K.D., 10 or more, $1.00 each; 50 or more, 90 cents each, 100 or more, 85 cents each. One nailed up sample postpaid, $1.25. Fred L. Poole, Elizabethtown, Rt. 2, Box 67, No. Car.

NOW AVAILABLE, Fumigil for control of Nosema disease in bees. Write for prices and circular by Abbott's Laboratories. PRAIRIE VIEW HONEY CO., 12303 12th Street, Detroit 6, Michigan.

FOR SALE—1,700 eight and ten-frame standard hive bodies with frames; some covers and bottoms. Extractor, boiler and jacketed piping. All in Louisiana. Name your own price and terms. Write L. M. Gulden, 4312 Maine, Baldwin Park, Calif.

FOR SALE—Root hand power foundation milling machine, $50.00. 8-frame automatic reversible honey extractor for 6¼ inch frames, $45.00 with power drive. Oliver Meyer, Preston, Iowa.

FOR SALE — About 1000 comb honey supers for 8 and 10 frame hives. They are complete with inventory at $1.00 each. C. M. Thomsen, P. O. Box 706, Pomona, Calif.

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Our prices with new cages

	Queens	2-lb. w/q	3-lb. w/q
1 to 9	$1.25	$3.50	$4.50
10 to 48	1.15	3.40	4.40
49 to 100	1.05	3.25	4.25

Prompt shipment — young laying queens — full weight — young bees. State health certificate with each order. Deduct 20 cents a package for bees in clean used cages.

Shipments made by express; your truck by prearrangement. Small orders go cheaper by parcel post. For further information write us.

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2-lb. pkg. w/q	$3.00	$2.90	$2.85
3-lb. pkg. w/q	4.00	3.90	3.85
Nice large queens	.95	.90	.85

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HONEY LABELS
Improved designs, embodying color, balance, simplicity, and distinction. Please send for free samples & prices.
C. W. AEPPLER COMPANY
Oconomowoc, Wisconsin

COMB FOUNDATION PLANT OF THE EAST—that's WAX WORKERS 1330 Slaterville Road, ITHACA, NEW YORK.

FOR SALE—300 10-frame supers with frames, cleaned, and state inspected. J. R. Clark, R. 2, Bellaire, Mich.

FOR SALE—8-frame Root equipment for 700-colony apiary. Write for details to E. H. Wadleigh, Monte Vista, Colo.

FOR SALE—400 supers of drawn combs, 25 of foundation, all four horizontal wires, 35 empty supers, 160 inner covers, 140 moving screens, 55 excluders, 173 telescope covers, 180 bottom boards, 1 24-frame Simplicity extractor, 1 capping tank. All standard equipment in good condition, no foulbrood, disease, $1200.00. Earl De Long, R. 2, Box 283, Snohomish, Wash.

FOR SALE: 75 modern (Root) hives. All equipment. Power uncapping machine and extractor. What am I bid? J. F. Lockard, Jr., 95 Beekman Ave., North Tarrytown, New York.

Extractor, Woodman 50-frame, gear honey pump, 18 10-frame colonies in dovetailed supers, 200 deep 10-frame supers, mitered ends, in fair condition, 40 cents each. Location, North Western part of Ohio. Chester Kintner, Alvordton, Ohio.

FOS SALE—1300 sheets Kelley's wired foundation, original cartons; 1000 Kelley's standard frames, original cartons; 20-frame extractor, honey pump and motor sump tank, 20 gallon; 100 8-frame supers, new comb, several hundred Stoller frame spacers, 7 comb spacing, new, level drain bottom boards, telescope covers, 10-frame new, no metal. Good condition, very reasonable. Write me or drive over. M. M. Melvin, 10 East Ave., Celoron, N. Y.

BEES AND QUEENS FOR SALE

We use all possible care in accepting advertisements but we cannot be held responsible in case disease occurs among bees sold or if dissatisfaction occurs. We suggest that prospective buyers ask for a certificate of inspection as a matter of precaution.

ITALIANS—Packages, Queens. Martz, Rt. 2, Box 846, Vacaville, California.

PACKAGE BEES—Take a vacation on your express money. Come for your bees. Be our guest while here. We have 1800 hives. Booking orders now. Write Miller Bros., Safford, Alabama.

THREE-BANDED Italian bees and queens. Our regular stock and the Dadant Starline Hybrid. Extra good bees. Due to the late springs in North Carolina we are breeding queens down here until May 1st. We will have queens laying any time after Feb. 10th, so we can give prompt service. Untested queens, 1 to 25, $1.20; 25 to 100; $1.10, 100 up $1.00. For Dadants Starline Hybrid add 30c to the price of our regular stock. Write for prices on package bees, all package bees will be shipped from our yards in N. Carolina after April 1st. Alamance Bee Company, La Belle, Fla., Box 485.

By prearrangement; a limited number of Carniolan queens, mated to Caucasian drones. Howard Weaver, Navasota, Texas.

ITALIAN queens, $1.25 postpaid. 2-lbs. bees and queen, $4.25; 3-lbs. bees and queen, $5.00, express collect. Dadant Starline Hybrid. "The Wonder Workers", 25c per queen additional. For parcel post, add postage 6 pounds and 7 pounds. S. J. Head, Crossett, Arkansas.

THE NORMA ROY APIARY Italian Bees, 3 pounds with untested queen, $3.25; 4 pounds with queen, $3.75. Live delivery and a health certificate with shipment. Book your order now. No down payment. Norma E. Roy & Son, Hessmer, La.

PACKAGE BEES, QUEENS: Prolific, gentle, and disease free Italians. Parcel Post, express, or truck. Circular. Crenshaw County Apiaries, Rutledge, Ala.

CAUCASIANS — Very hardy, gentle, long-lived, good workers. Personally raised laying queens, $1.10 each. Ready about April 18. Fred Brock, McDonald, Tenn.

Dark Italian Queens, 600-pound strain, bred for production, $1.00. With 2 pounds of bees, $2.85; with 3 pounds of bees, $3.70. Henry Loehr, Caldwell, Texas.

CAUCASIANS, 2-lb. pkg., $3.00; 3-lb. pkg., $4.00. Untested queens, $1.00 each; 100, $75.00. Lewis & Tillery Bee Company, Greenville, Ala.

160 colonies, Italians, $9.00 each. Complete comb or extracting supers, $2.00. Walter Naegele, Stillwater, Minn.

FOR SALE—Due to owner's death, 36 colonies tested bees, extractor, capping and supply tanks, frames and supers. Mrs. Wells, 127 Grafton Ave., Alma, Mich.

FOR SALE—About 90 colonies bees, successfully operated 20 years by man located north, for increase. Ten days to six weeks for gross $600 to $2,000. L. L. Ferebee, Tillman, S. C.

FOR SALE — 30 colonies bees fully equipped, ten-frame, disease unknown. Honey tank; automatic sling. Charles Thompson, R. 3, Falmouth, Ky.

SEEDS

HONEY PLANTS our specialty. Catalog on request. Pellett Gardens, Atlantic, Iowa.

MISCELLANEOUS

Bargains in new or used honey cans or Root Supplies for cash or honey. Buckey Honey Company, 3930 N. High St., Columbus 14, Ohio.

POLLEN PIES — Supplements lack of natural pollen and stimulates brood rearing when adverse conditions occur. Accepted by leading apiaries. Hive fed. Compounded to order—always fresh. One pound Pollen Pies, $1.00; 12 pies, $11.50. Mailed F.O.B. Sidney. One pound rears 4,500 bees. Increase your hive population and honey production. Order today. Easton's Beeteria, Box 99, Sidney, New York.

HELP WANTED

WANTED—Beekeeper 1955 season. State experience, give references. Hartman, 4851 Paddock Road, Cincinnati, Ohio.

WANTED—Two experienced bee men. Year around or seasonal. Jims' Valley Apiaries, Sunnyside, Washington.

WANTED — two men to work in our packing plant and apiaries. Excellent wages, bonus, other advantages. Schultz Honey Farms, Ripon, Wisconsin.

MAGAZINES

Know interesting facts concerning the bees of India through the INDIAN BEE JOURNAL, published in English by the Bhupen Apiaries (Himalayas), Ramgarrh Dist. Naini Tal, U. P. India, or available through them. Subs. Rs9/ or 15 shillings

WHAT NOW

Let us tell you what we will furnish your 1955 Bees and Queens for. State number wanted for delivered or F.O.B. prices.

MERRILL BEE CO.
P. O. Box 115
State Line, Miss.

Booking orders now. Over 30 years a shipper. Send for Free Circulars.

BLUE BONNET APIARIES
Weslaco, Texas

CAUCASIAN or ITALIAN
Package Bees and Queens

Bees gentle to work with, less swarming, good producers, health certificate, and live arrival guaranteed are just a few things you get when your requirements are sent to me.

PRICES ARE:

Quantity		1-25	25-50	50-100
2-lb. pkg.	w/q	$3.00	$2.90	$2.85
3-lb. pkg.	w/q	3.90	3.80	3.75
4-lb. pkg.	w/q	4.85	4.75	4.65
5-lb. pkg.	w/q	5.80	5.70	5.50
Queens		1.05	1.00	.95

FARRIS HOMAN
Shannon, Miss.

Good Italian Queens
In season
White Pine Bee Farms
Rockton, Pa.

Get More Per Hive In 1955

Use Package Bees with Island Hybrid Queens

We plan larger and better production of 4-way Hybrid queens in '55.

Place your order early for favored dates and delivery on Package Bees.

Prices with Island Hybrid Queens

	2-lb.	3-lb.
1 to 25	$3.65 ea.	$4.65 ea.
26 or more	3.40 ea.	4.40 ea.

For regular queens, deduct 25c per package. Write for prices on early Booster Bees.

"They Produce"

Rossman Apiaries

P.O. Box 133 Moultrie, Ga.

Phone: 755R

HARPER'S FAMOUS

High Quality Italian

QUEENS & PACKAGE BEES

Lots of	Queens	2-lbs.	3-lbs.	4-lbs.	5-lbs.
1-11	$1.10	$3.25	$4.25	$5.15	$5.95
12-up	1.00	3.00	4.00	4.85	5.60

All Queens sent Air Mail. Package bees sent Express Collect or Parcel Post when prepaid by customer. Parcel Post is much cheaper and has proven to be very satisfactory. Live Arrival Guaranteed. Please send orders in early.

Carlus T. Harper

New Brockton, Ala.

QUALITY-BRED

Italian Queens

Ready March 10, 1955

$1.00 each or $10.80 per doz.

All queens shipped Air mail. Write for price on package bees delivered by truckload.

Walter D. Leverette Apiaries

P. O. Box 364 Ft. Pierce, Fla.

or $2.25 yearly. Sample copy post free for Rs1/8/, or s2/6, or 40 cents (International Money Order). Payment in mint postage stamps of your country accepted.

ARCHIVE of BEE SCIENCE (Archive fur Bienenkunde), oldest scientific, independent bee journal in the world. Select feature material gives lasting theoretical and practical knowledge. Sample copies available. Two large 1953 editions for the low price of DM 5.50. Biene-Verlag (Bee Publishers), Lindau (B), Postcheck Karlsruhe 5581, Germany.

BEE WORLD, the international journal of the Bee Research Association, published monthly, contains the latest research reports on bees and beekeeping. With Apicultural Abstracts it costs $3.00 per annum. Apicultural Abstracts only $1.75 per annum from the Hon. Subscription Secretary, Bee Research Association, 10 Barnett Wood Lane, ASHTEAD, Surrey, England.

Read the South African Bee Journal. Published every two months. Subscription 7/6 per year to the Treasurer, P. O. Box 3306 Cape Town, South Africa.

INTERESTED in Angora Goats? Read the Sheep and Goat Raiser, Hotel Cactus, San Angelo, Texas, the only ranch magazine published serving the Angora Goat industry. Subscription $1.00. Sample copy fifteen cents.

19 Italians 55

Package Bees and Queens

Good Producers

Dependable Service

Joe Pencin

Box 517 Davis, Calif.

JOHN DAVIS QUEENS

We ship until November 1 and fall is the right time to requeen. Order now and be sure. $1.00 each, any number.

LITTLE'S APIARIES

Shelbyville, Box 122, Tenn.

ITALIAN BEES & QUEENS

2-lbs. & queen $2.75

3-lbs. & queen 3.50

Prompt shipment.

Satisfaction guaranteed.

A. J. HOOK Eutaw, Ala.

"The Australian Bee Journal"

Published by the Victorian Apiarists' Association at the beginning of each month.

Subscription 10/-per annum plus 2/6 postage to oversea countries.

Address 112 Whitehorse Rd. Ringwood, Victoria, Australia

STOVER'S
QUALITY BEES

QUEENS **PACKAGE BEES**

ITALIANS are our own strain which we have developed for many years and so far we haven't found any that are better. They are reared in our yards at Mayhew, Mississippi, and Helena, Georgia. You will find them an excellent general purpose bee.

Our CAUCASIANS are a combination of two outstanding strains we secured 15 years ago. They are very gentle to handle, build up quickly, are good honey-gatherers, and if propolis is not a problem with you, are well worth a trial. They are also reported to resist European foulbrood exceptionally well.

Trucks—If you can use a truck load be sure to contact us, as it will be well worth your while. We ship by parcel post and express too, and each order, large or small, will have our personal attention.

It pays to get your bees from a reliable shipper, one that has b e e n in the bee business for a long time and knows how to produce both queens and bees. We have specialized in their production for over 40 years. Why not profit from this experience?

We are also feeding our queen yards "Fumidil B" for extra vigor.

PRICES to May 20, 1955

In Lots of	Queens ea.	2-lb. & qn.	3-lb. & qn.	4-lb. & qn.	5-lb. & qn.
1-24	$1.25	$3.70	$4.60	$5.50	$6.40
25-99	1.15	3.45	4.30	5.15	6.00
100-499	1.05	3.20	4.00	4.80	5.60

Tested Queens $2.00 each

Queens Postpaid—Airmailed—Clipped—No Extra Cost
For Queenless Package Deduct Price of Queen
Packages F.O.B. Shipping Points

THE STOVER APIARIES
Mayhew, Miss.

Three-band Italians
Package Bees and Queens
2-lb. Pkg. w/q $2.50
3-lb. Pkg. w/q 3.30
Queen ..... .70
Experienced Shippers
Dependable Service
HONEY BOWL APIARIES
Box 574
F. R. Sawyer, Owner
Bunkie Louisiana

Italian Queens
75c each
Air Mail
and
Guaranteed to Please
O. K. Anderson & Son
Box 193
Coffee Springs, Ala.

CAUCASIAN
&
CARNIOLANS
Start the New Year with young queens and be assured of plenty of bees when the honey flow starts. Caucasians or Carniolans build up rapidly, build white combs, and are gentlest of all races of bees.
Untested queens ..... $1.20 ea.
Foreign ..... 1.50 ea.
Discount on quantity.
Order early to be sure of queens, ready March 10th.
W. D. REAMS
Box 87 LaBelle, Florida

— HONEY WANTED —
ALL GRADES. SEND SAMPLES
ADVISE QUANTITY
HONEY SALES COMPANY
1806-08 No. Washington Ave.,
Minneapolis 11, Minnesota

ATOMIC BEES

(Continued from page 175)

"Well, how do I get a requisition?" asked the beekeeper.

"I'll have to call the top man," quoth the checker.

Now the top man also saw a chance to add some fuel to the fire, so he came down with a ruling that if the bees were to fly out of the yard on their own account, then a requisition wouldn't be necessary.

"But that won't get me any honey," wailed the desperate beekeeper, "And I'm not going to stand around and wait for the bees to fly out."

"Well, in that case," said the big wheel, "I'll put through a requisition right away that will take care of both." It went through official channels and was duly approved, and the beekeeper got both the bees and the honey.

At least, that's the story.

HONEY WANTED
Cut Comb and Extracted
Advise what you have
T. W. BURLESON & SON
WAXAHACHIE, TEXAS

WILLIAMS' ITALIAN QUEENS
LARGE LEATHER COLORED
THREE-BANDED
QUALITY SUPREME
CERTIFICATE WITH EACH SHIPMENT
1 - 9 Postpaid, Airmail $1.00
10 -99 " " ..... .95
100-up " " ..... .90
DR. WILLIAMS APIARIES
115 W. Sterling Ave. Baytown, Texas

Healthy Italian Bees & Queens
Write for 1955 Prices
Georgia Bee & Honey Apiaries
P. O. Box 312 Hortense, Ga.

ITALIAN BEES AND QUEENS
2-lb. pkg. with queen $2.80
3-lb. pkg. with queen 3.40
4-lb. pkg. with queen 4.15
5-lb. pkg. with queen 4.95
Extra queens, each, ... .85
Live delivery guaranteed and health certificate with each shipment.
GASPARD BEE CO.
Hessmer, Louisiana

Prepare for the Future . . . .
Buy United States Savings Bonds Regularly!

CHOOSING AN APIARY SITE

(Continued from page 138)

since the loss of any one would not be too serious and this would be a saving for the beekeeper, too. In the spring when supers are needed rapidly there is no delay in getting them to the beeyard because of bad roads or other reasons.

Commercial beekeepers equip their trucks with boxes for holding everyday equipment but most agree that smoker fuel because of its bulk is best left in the apiaries.

Other items which might be left in the beeyard in a small building are excluders, bee escapes where they are used, pallets for loading and moving supers and bottoms and covers. Many beekeepers are switching to a combination bottom board and cover which will serve as either and means that fewer "extras" must be kept available.

(to be continued)

Italians QUEENS Caucasians

2-lb. pkg. with queen	$2.60
3-lb. pkg. with queen	3.45
Queens, each	.75

CLARK'S APIARIES
Bunkie, La.

1955 QUEEN BEES
3-Banded Italians

1-9 ..... $1.10 each
10 or more ..... 1.00 each
Queens ready about April 5th.

Geo. W. Moore
Shasta, Shasta Co., California

FILLING UP ALL EMPTY EQUIPMENT

That is what most all beemen are saying for this coming season. Give us your orders early in order to be sure of your bees and queens on time.

THREE BANDED ITALIAN BEES and QUEENS

	Queens	2-lb. w/q	3-lb. w/q
1-24	$1.00	$3.00	$4.00
25-99	.90	2.85	3.85
100-up	.75	2.75	3.75

For queenless package, deduct price of queen. Shipments by Express, Parcel Post, or load your truck.

LUCEDALE APIARIES
LUCEDALE, MISS.

BEES and QUEENS

The rearing of good Italian queens and bees is our only business.

45 years experience

	1-9	10-48	49-up
2-lb. pkg. w/q	$3.60	$3.35	$3.25
Queens	1.25	1.15	1.10

Add 90c per pound for larger packages. Young laying queens. Full weight. Young bees. Health certificate with each shipment. Prompt service.

W. E. PLANT
Rt. 2, Hattiesburg, Miss.

NORMAN BROS.
PACKAGE BEES AND QUEENS
— KEEP US IN MIND —

For real quality package bees and queens plus prompt service. The foundation of our business is now and has been for the past 33 years to furnish you with the best BRIGHT 3-BANDED ITALIANS that money can buy. Let us book your order NOW and serve you best for 1955. Full weight, safe arrival, health certificate, and satisfaction.

—PRICES—	1-11	12-100
2-lb. pkg. with queen	$3.25	$3.00
3-lb. pkg. with queen	4.00	3.75
Untested queens	1.00	.90
Tested queens	2.00	1.75

Package bees are shipped Express F.O.B. If wanted shipped parcel post, add postage.
NORMAN BROS. APIARIES Ramer, Ala.

GRAY CAUCASIANS

30 years of selective breeding. They are gentle, prolific, and excellent honey producers.

Package Bees with Queens
April 5th to June 1st.

	2-lb.	3-lb.
1 to 49	$3.50	$4.50
50 up	3.25	4.25

Shipped Via Express Collect or Parcel Post. Let us figure your parcel post rates. Book your order NOW.

BOLLING BEE CO.
Bolling, Ala.

PACKAGE BEES FOR 1955

Dadant Starline Hybrid Stock—38% Better Honey Production than the average common stock of the country (3 years' trial)—18% Better Egg-laying Ability than the average common stock of the country (4 years of trial). Results of other trials obtainable by mailing us a postal card.

GARON'S OWN 3-Banded Italian Stock improved through know-how in selecting Breeding Queens and Drone Mothers for combinableness necessary for highest honey production.

DADANT'S STARLINE HYBRIDS

Reg. U.S. Pat. Off.

OUR PRICES:

	QUEENS		Package Bees & Queens		
	Italians	Starlines			
1-24	$1.15	$1.50	$3.40	$4.35	$5.30
25-99	1.10	1.40	3.30	4.25	5.20
100-up	1.05	1.30	3.20	4.15	5.10

When Dadant Starline 4-Way Hybrid Queens are wanted with packages, add 25c extra per package.

Queens clipped and marked when desired, and air mailed at no extra cost.

GARON BEE COMPANY **Donaldsonville, La.**

JENSEN'S PACKAGE BEES AND QUEENS

A.O.A. AMERICAN BEE JOURNAL

In our 40th year of producing and shipping we lay no claims to being the largest shippers. but when it comes to quality we claim to rank near the top. Prepared to load trucks by pre-arrangement. Express connection unsurpassed. Small lots parcel post. Our queens will be reared with Fumidil-B, as a preventive and control of Nosema, which in itself may tend to reduce early supersedure of queens. Increased production of Dadant "Starline" Hybrids enables us to make **Special Introductory Offer:** On all orders for regular stock we will substitute ten Starlines (or 10% of order whichever is least) at regular stock prices. Clipped and marked FREE.

DADANT'S STARLINE HYBRIDS

Reg. U.S. Pat. Off.

	Queens "Starline" Hybrids	Queens "Magnolias"	2-lb. Pkgs. with Queens	3-lb. Pkgs. with Queens
1-24	$1.50	$1.25	$3.75	$4.75
25-99	1.40	1.15	3.50	4.50
100-up	1.30	1.05	3.25	4.25

If packages are to have "Starline"Hybrid queens, add 25c to each package.

JENSEN'S APIARIES **MACON, MISSISSIPPI** **U.S.A.**

ITALIAN

Package Bees and Queens for 1955

	1-11	12 or more
2-lb. pkg. with queen	$3.25 ea.	$3.00 ea.
3-lb. pkg. with queen	4.25	4.00

Live delivery guaranteed.

GIRARDEAU APIARIES **Tifton, Ga.**

THREE-BANDED ITALIAN PACKAGE BEES AND QUEENS

Shipped Anywhere in United States and Canada

1955 Prices F.O.B. Hampton, S.C.	Queens (each)	2-lb. & queen	3-lb. & queen	4-lb. & queen	5-lb. & queen
1 - 24	$1.10	$3.50	$4.50	$5.50	$6.50
25 - 99	1.00	3.25	4.25	5.25	6.25
100 - up	.95	3.00	4.00	5.00	6.00

(For queenless packages deduct price of queen)

Guaranteed safe arrival

Health Certificate with each shipment

Queens clipped and painted if desired

Shipper rated in Dun & Bradstreet

TERMS: One-third with order, balance 10 days before shipment.

H. C. BRUNSON **Hampton, South Carolina**

P. O. Box 188 Phone: 2161

U. S. Savings Bonds come in all sizes . . . . .
and grow bigger every year.

TOO LATE TO CLASSIFY

HONEY TANKS, new and used, 60 to 200 gallons. Would trade. What have you? R. G. Hathaway, Manhattan, Illinois.

FOR SALE—400 colonies of bees, locations and equipment. Large extracting plant, house and acre of ground, located in San Louis Valley, Colorado.—L. R. Rice & Sons, Greeley, Colo.

WANTED—Good experienced beekeeper. Good salary. Year around or seasonal. I. O. Jones, 119 9th Ave., S.W., Aberdeen, S. D.

FOR SALE—360 colonies Caucasian—Carniolan bees. Good four-story eight-frame Standard equipment. Good orchard pollinating rentals. Large leased range Western Washington. Good prospects for range under new irrigation projects. No known disease. New 50-frame extractor and full honey house equipment. Box 355, Gleanings in Bee Culture, Medina, Ohio.

HYBRIDS

Three-Band Italians Caucasians

Equal in quality to any that we know of, with that extra ability to produce that means **profit** to you.

	Queens	2-lb. w/q	2-lb. w/q
1-24	$1.20	$3.95	$4.75
25-99	1.10	3.70	4.50

Prices quoted on larger quantities. We ship by express or parcel post.

THE COFFEY APIARIES
Whitsett, Texas

PACKAGE BEES & QUEENS
"Italians"

Wilbanks offers you tested stock proven for honey producing ability and easy handling. Satisfied customers through years assure you of the greatest value here.

— PRICES —

	1-9	10-up	parcel post ship. wt.
2-lb. pkg. with young laying queen	$3.25	$3.00	7 lbs.
3-lb. pkg. with young laying queen	4.25	4.00	8 lbs.
4-lb. pkg. with young laying queen	5.25	5.00	10 lbs.
Extra Queens	1.10	1.00	Postpaid

Shipments by Express, Parcel Post or your Truck.
Package Bees F.O.B. — Include Postage for Parcel Post Shipments

QUALITY DOES NOT COST — IT PAYS

THE WILBANKS APIARIES **Claxton, Georgia**

THE QUEEN AND HER CARE

(Continued from page 140)

eaten out by the bees, and in this way, the queen will be released in a shorter time.

The queen cage should be inverted and placed so that the wire screen of the cage is over the space between two frames near the center of the hive body. A hive body or the inverted inner cover is placed over the queen cage. Another method is to suspend the queen cage toward the rear of the hive in the upper part of the brood nest. It can be suspended by driving two 4-penny box nails into each side in such a way that the queen candy end will slope upward when placed between two combs or top bars. Allow a bee space, three-eighths inch, between the wire screen of the cage and the object near to it. This will allow the bees to care for the queen. One frame and comb will need to be removed to make room for the suspension of the queen mailing cage.

Instructions as to how the queen-mailing cage can be used as an introduction cage are attached to the cage. After placing the queen-introduction cage in the colony, there should be no disturbance of that colony for seven days in order to allow the bees and the queen to become adjusted to each other. A disturbance, such as examination of the colony, may cause the loss of the queen.

HONEY JARS FOUND TO BE MONEY JARS

(Continued from page 177)

counted out $521 in 50-cent pieces and a $1 bill.

Thursday night he telephoned back to Texas.

"By golly, you were right," he told Warrick. "The jars are full of half dollars and I'm sending you a bank draft in the amount of $522 right away."

Word from Texas is that Mr. Renfro is telling his friends:

"No more honey money jars for me."—Sent by Arthur White, Onsted.

Look for this Sign
When you Want
QUALITY AT LOW COST

Trade Mk. Reg.
U. S. Pat. Off.

KELLEY — "The Bee Man"

BEES and QUEENS

Three-banded Italian bees and KELLEY'S ISLAND improved hybrid queens direct from our own farm. Shipments start April 1st, express or parcel post shipment. Thousands of extra queens.

	Kelley Island Queens	2-lb. bees & K. I. queen	3-lb. bees & K. I. queen
1-24	$1.10 air mail	$3.50	$4.50
25-99	1.05 air mail	3.25	4.25
100-up	.95 air mail	3.00	4.00

* Last month our advertisement got mixed up—these are our actual selling prices. They are net—no discounts.

THE WALTER T. KELLEY CO., Clarkson, Ky.

DARK ITALIANS
As GOOD as the BEST (Including Hybrids)

With Queens	1 to 9	10 to 50	51 & up
2 lb. pkgs.	$3.75	$3.50	$3.25
3 lb. pkgs.	4.75	4.50	4.25
Extra queens	1.20	1.10	1.05

A Commercial Breeder for 28 years.
WEAVER APIARIES **Navasota, Texas**

Italian Queens
EUGENE WALKER
Rt. 2, Box 207
Live Oak, California

If you are taking time to read, why not read the best? Condensed to save you time. Illustrated to give you pleasure.
Modern Beekeeping
The Picture Bee Magazine
Clarkson, Kentucky

U. S. Savings Bonds come in all sizes . . . . .and grow bigger every year.

LET'S TALK ABOUT HONEY PLANTS

(Continued from page 166)

pureum) is an important early source of nectar and some pollen in Kentucky beginning in late February and lasting until the first week in April. As you can see in the photograph the purple flowers are two-lipped and tubular. Bees have to push their heads into the flower in order to reach the nectar. In doing so they get their heads completely covered with purple pollen which gives them a queer appearance. Although henbit is a weed and springs up in great mats on cultivated ground, old lawns, and waste places, it quickly dies down when the grasses get started and does not cause any trouble during the summer.

Brazos Valley Apiaries
Cameron, Texas

Italians

Brazos Valley Apiaries
Cameron, Texas

Package Bees and Queens

By Express or Parcel Post Extensive Experience in Loading Out Trucks

	1 pkg.	2 or more
2 lbs. bees with young queen	$3.25 each	$3.00 each
3 lbs. bees with young queen	4.25 each	4.00 each

Nearing a half century in the same place, same business, under the same name, is my record. My motto: "I expect to do business with you again."

H. E. Graham Cameron, Texas

PACKAGE BEES ITALIAN QUEENS

Good Producers — Gentle

You will like them. Good service.

A. R. BANTA Los Molinos, Calif.

Three-Band Italian Package Bees and Queens and Pure Italian Three-Way D. R. Queens

Full weight, prompt shipment, young bees. State health certificate with each shipment. Live arrival guaranteed. Replacement or refund made promptly upon receipt of bad order from your express agent.

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Lots of	2-lb	3-lb.	4-lb.	5-lb.
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30 -100	3.00	3.75	4.50	5.25
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Tested Queens $2.00 each Untested Queens $1.00 each

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That will stand the test for Honey-Gatherers: Gentle; Prolific; Queens bred from hives making 300 pounds honey; guaranteed mating and laying; state health certificate with each shipment; full weight, prompt shipment, live delivery guaranteed. So RUSH your orders. Only have a few more open dates.

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31 to 100	.95	3.00	3.75	4.40	5.25
101 up	.80	2.80	3.50	4.25	5.00

Tested Queens, $2.00. All queens shipped airmail delivered.
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We specialize in early queens and shipping will start about March 10. Package shipments will start about March 15th. RUSH us your orders for prompt service and QUALITY bees and queens. TRUCKS loaded within 24 hours. You will never regret using GULF BREEZE stock.

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100-up	1.10	3.25	4.15	5.15

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No False Claims. QUEENS — famous "Better-Bred"; BEES — young and vigorous, honest weight; SERVICE — On the level, clean, honest, fair; RESPONSIBILITY — proven through 26 years of experience. Let us book your order at the following prices:

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99 or more	1.00	3.00	4.00

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April 1955

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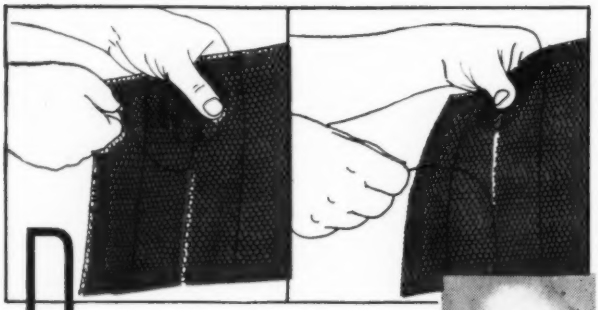

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Accurate Embedding So Bees Use Every Inch

The Crimped Wires Are in a Flat Plane in the Very Center of Every Sheet.

Each crimp is mechanically perfect; each one embedded in the very center of the pure beeswax sheet.

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The wires become an integral part of the foundation, specially shaped and formed for the exact needs of perfect combs.

Remember, the profits from your bees are influenced by the combs you use. Dadant's Crimp-wired Foundation gives you Lifetime Combs for years of heavy duty service.

J. D. Beals
Harlingen, Texas

The Choice Of Expert Beekeepers

- In heat or cold the hooks will hold
- The crimped wires radiate shoulders of strength
- Wires of special steel for greatest support
- Accurate embedding so bees use every inch
- Made only from pure beeswax
- Refined for utmost cleanliness
- Brilliant, natural color
- Accepted at once by the bees
- Cell walls a guide to perfect comb
- Milled to exact measures
- All cells just alike
- Every sheet the same
- Carefully and rigidly inspected
- Securely and safely wrapped

Gives You LIFETIME COMBS

CRIMP WIRES for STRENGTH

Thirty-four years ago this spring you folks sent me a sample of your brood foundation into which you had embedded vertical crimp steel wires. The sample looked good to me and so I bought a hundred pounds. This was the first foundation that I had ever bought.

Since then, I have used many carloads of your Crimp-wired Foundation and have seen many hundreds of thousands of combs built from your Crimp-wired Foundation. I do not remember seeing one comb in which the comb had sagged. I have seen thousands of combs built from foundation in which other types of wires were embedded and in these combs there was considerable sagging.

I am no engineer so I cannot say why these combs would sag and the ones built from your crimp-wire would not. My belief is that the crimps just simply give more strength to the wax.

J. D. Beals
Harlingen, Texas

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